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THE INDICATION OF NEPHROSTOMY PRELIMINARY TO URETERO-RECTONEOSTOMY

FRANK HINMAN, M.D.

SAN FRANCISCO

The transplantation of ureters into the bowel is regarded as justifiable in a relatively small group of cases. Freed from the many dangers both immediate and remote, the applicability would jump immediately to a respectable figure. As it now is, the procedure may be used only as a desperate means of relief of last resort.

The widest application has been in exstrophy of the bladder and similar anomalies, and no doubt a short life of continence and comfort is preferable to the shorter one of pain and misery inevitable to the unfortunate children born with this deformity. Yet ureterorectal transplantation for exstrophy is not an ideal surgical procedure nor ever will be even if freed from its present dangers. Such an individual is at once removed from the service of modern urologic methods, well illustrated by a patient of my own who had lived six years comfortably with the ureter of the only remaining kidney emptying into the rectum when she was suddenly taken with fever without localizing symptoms. She lived in the country and did not come in until in the early stage of uremia. Even then had we been able to catheterize the ureter and apply preparatory catheter treatment, the kidney most probably could have been reactivated. Roentgen-ray examination showed a suspicious shadow, and the exploratory operation with removal of a large stone that completely blocked the upper ureter failed to relieve the anuria. The case shows how intestinal transplantation ties our hands in recognizing and caring for subsequent renal complications and, if for no other reason, renders ureterorectoneostomy for exstrophy objectionable. A surgical victory over this defect is inevitable, but there can be none without restoration to near normal relationships. What has been done for cleft palate is possible for cleft symphysis. Orthopedic measures must be applied. The prolonged tedious and continuously applied methods of straightening teeth and jaws should serve as an example and stimulus. The difficulty is largely that we each get too few patients to work with, the majority of whom are too poor to stand the expense of years of treatment and the rest unwilling. Two patients that were started on this plan by me went across town and had ureters transplanted. The suggestions of Hugh H. Young [1] and of J. E. Burns [2] are hopeful.

TRANSPLANTATION OF URETERS IN ACQUIRED CONDITIONS

Certain acquired conditions form another group in which transplantation of the ureters or ureter sometimes becomes a necessity or is desired in order properly to complete other operative measures. Cancer of the bladder may be so extensive as to necessitate total cystectomy in order to offer any hope of cure, thus requiring the transplantation of the ureters to the skin or rectum. And tuberculosis of the bladder is often found to be progressive even after the one tuberculous kidney has been removed, rendering the patient miserable because of pain and frequency, and, what is more serious, sometimes leading to a progressive destruction of the remaining kidney by hydronephrosis through constriction of the vesical end of the ureter. We have had three such cases treated for long periods to relieve the bladder infection without benefit, during which time kidney function was seen to fall gradually, in one case to 5 per cent in two hours, through back pressure destruction. All attempts to dilate the lower ureter were unsuccessful. In all three of these cases the ureter has been successfully transplanted to the rectum. One patient, mentioned above, lived six years in comfort and cleanliness and then died of the stone complication. A necropsy found that the ureterorectal transplant was in perfect condition, that the rectal mucosa was of normal appearance (fig. 1) and that the kidney pelvis was not dilated beyond what would be expected from the stone obstruction that had been a secondary complication. The kidney itself appeared unusually well preserved (fig. 2). At the time of transplantation the ureter was markedly dilated and at necropsy it was found that this condition had not shown any material shrinkage. This is to be expected from results that have been obtained experimentally. A ligature placed at the lower end of the ureter in experimental hydronephrosis causes a progressively developing hydro-ureter. In the repair experiments in which this hydro-ureter was retransplanted to the bladder with renal repair there was marked shrinkage of the kidney with retention of the kidney shape, but little change subsequently in the hypertrophied and dilated ureter.

It was also noted in these studies that when an experimental animal which had had one ureter completely ligated was opened, the hydro-ureter showed active peristalsis on the slightest stimulation, even in those advanced stages of complete hydronephrotic atrophy. But in those cases of secondary atrophy and not of repair following the ureterocystoneostomy the ureter is found also to undergo shrinkage and atrophy, and this would seem to be largely a disuse atrophy. In another case in every way similar to the foregoing, the patient lived over two years and died of a complicating bilateral pneumonia unrelated to his urinary condition.

1. Young, H. H., in discussion on Bottomley, J. T.: Exstrophy of the Bladder, J. A. M. A. **49**: 167 (July 13) 1907; Modern Urology, Philadelphia, W. B. Saunders Company, to be published.
2. Burns, J. E.: A New Operation for Exstrophy of the Bladder, J. A. M. A. **82**: 1587-1590 (May 17) 1924.

A phenolsulphonphthalein test by rectum done just a few weeks previously showed a 45 per cent output. Unfortunately, in this case a postmortem examination was not obtained. In a third case the hydro-ureter of the remaining nontuberculous kidney, already hydronephrotic from the obstruction at the vesical end of the ureter, as a result of the constriction of the tuberculous bladder, has been transplanted to the rectum within the last few months. In this last case preliminary nephrostomy was performed, a discussion of the advisability of which is my object in this communication. At the time of this nephrostomy, careful inspection of the kidney showed no evidence of any tuberculosis. The finding at necropsy (case 1) and at operation (case 3) of a hydronephrosis without tuberculosis is solid food for thought. Statistics tell us that in renal tuberculosis nephrectomy before vesical involvement is curative in practically 100 per cent, but after vesical ulcers have appeared, in only about 60 per cent. This finding raises the question of whether a good proportion of the 40 per cent that succumb following nephrectomy for renal tuberculosis do not die because of a progressive hydronephrosis of the remaining kidney from obstruction due to the progressive contracture and fibrosis of the badly infected bladder. It also raises the question as to whether a preliminary nephrostomy alone might be of benefit in these cases in putting the bladder at rest. Subsequent ureterorectal transplantation might not then be required.

CANCER OF UTERUS

Cancer of the uterus may be so located as to spread early to neighboring organs such as the rectum and bladder, and in order to do a radical resection of the cancer it would sometimes be necessary to sacrifice both bladder and rectum. The ureters are sometimes unintentionally injured or resected, and the usual procedure has been to tie off the ureter if recognized at the time, or do a nephrectomy later to close the urinary fistula, if only one has been injured. Were ureterointestinal transplantation feasible, much more radical operations on both the uterus and bladder would be possible. A large vesicovaginal fistula subsequent to hysterectomy and the use of radium for an extensive cancer of the cervix came to us within the last few years for repair. On the first examination, fragments taken from the area failed to show any evidence of malignancy and it was thought that the fistula was largely the result of the radium burn. An attempt to close the fistula in the usual manner resulted in failure. The patient returned several months later and it was found that the opening was larger than on the previous entrance, pain was much more severe, and all the urine dribbled into the vagina; curettings from the area showed definite malignancy. Careful roentgen-ray and other studies failed to show any evidence of metastases to any distant point. After consultation with the general surgeons and gynecologists, it was decided that the only relief to be offered would be by ureterorectal transplantation and then, should progress of the case justify it, a more radical resection of the involved area of the pelvis could be done. The right ureter, which was considerably dilated, was first transplanted. The patient's convalescence was complicated by pronounced nausea and vomiting without fever or abdominal distention, counteracted only by a retention duodenal tube; but without any other apparent complications she gradually failed and died on the thirteenth day after operation. A complete necropsy failed to show any evidence of metastases from the primary site of growth, which, however, was quite extensive, involving the bladder and the vagina, but not the rectum. The ureteral transplant was apparently in good condition and quite patent, and there was no ascending infection to the kidney nor any local peritonitis. Urinary drainage through the rectum had been noted before death. No cause for death other than alkalosis could be given.

OTHER CONDITIONS IN PELVIS

There are other surgical and pathologic conditions in the pelvis and about the lower end of the ureters in which either accidentally or purposely unilateral partial resection or destruction occurs, and in these conditions retransplantation to the rectum would be indicated, provided the procedure were safe, in preference to simply tying off the ureter or performing nephrectomy. In one case of our own of extensive tuberculosis of the seminal vesicles, the ureter on the left side was accidentally injured in removal of the large tuberculous vesicle on this side. Urinary fistula resulted, and the question arose as to what should be done with this open ureteral end. With partial or complete closure of the drainage tract, rise of temperature and pain would occur, relieved only by the removal of the obstruction by dilation or curettage of the urinary fistula. Urologic study showed that the opposite kidney was perfectly normal and was gradually undergoing compensatory hypertrophy. Several cystoscopic examinations showed that the bladder was absolutely clear and that there was no opening or rupture of the bladder that would account for the urinary drainage through the perineum. At no time was one able to catheterize the left side, the side on which the ureter had been either cut or injured. Finally nephrectomy was decided on as the safest procedure, and it was found after removal that this kidney showed an early, rather acute type of tuberculosis and there was definite evidence of ascending infection. We have seen a number of similar cases in consultation with gynecologists in which the lower end of the ureter has been accidentally injured or resected, in which if unilateral the course is similar to that of the foregoing case. In most of these cases, nephrectomy later has seemed the advisable method of procedure. It is rarely possible to bring the ureter to the bladder for ureterocystoneostomy and usually impossible to bring the divided ureteral ends together for suture. This subject is of particular interest in view of the general controversy as to the result of complete ureteral ligature in man, most textbooks and many eminent surgeons stating definitely that there will be no bad effects but that if the ureter is completely tied the kidney will undergo a silent primary atrophy. This is in direct opposition to all experimental results, and clinical facts definitely refute it. Hydronephrosis will almost invariably result although a secondary atrophy may subsequently develop; but this secondary atrophy is an entirely different thing from a primary atrophy. Of seventeen cases of ureteral ligation in which the kidney was later examined, fourteen showed a definite hydronephrosis, and of sixty-four cases of ligation of one ureter reported in the literature, only twenty patients are said to have later experienced no discomfort or deformity.[3]

3. Hinman, Frank: An Experimental Study of the Pathogenesis of Hydronephrosis, Surg. Clin. N. America, to be published.

CANCER OF PROSTATE

The success of Coffey [4] in the radical resection of the rectum for cancer raises the question whether our treatment of cancer of the prostate has been sufficiently radical. It is the exception to see cancer of the prostate early enough to permit the radical operation of Young or Geraghty's modification. With the urine safely diverted elsewhere, the prostate, seminal vesicles, bladder and the pelvic lymphatics of primary drainage from the prostate could be easily removed *en masse*. Except for the pudic and sacral branches, which arise highest and could easily be preserved, the whole anterior division of the internal iliac artery and vein could be ligated at the time of ureteral implantation, which would render quite easy the later perineal resection of the whole mass. At the time of the ureteral transplantation it would of course be advisable to free the bladder thoroughly and leave in suprapubic drains. An unsuccessful attempt to perform this procedure does not disprove its logic in a properly indicated case. This failure was in a man of good general health and strong constitution who had quite an extensive carcinoma of the prostate that spread well up to the base of the bladder, involving both seminal vesicles but in whom evidence of general metastasis was absent. Radium in heroic doses had been tried for a number of months without any apparent effect on the spread of the growth. He suffered considerably even on the retention catheter. His kidney function was normal. He was quite anxious when the situation had been thoroughly explained to him to have the operation outlined above done. Following the transplantation of the right ureter, he developed an acute bronchopneumonia and died. At necropsy no metastases were found, the transplant was in good condition except that there was some localized peritonitis, and he had an extensive bronchopneumonia. Had we known as much then as now about intestinal transplantation, his chances would have been materially improved.

So far as indication for performing ureterorectoneostomy is concerned, the advantage of being able to divert the urine safely is at once apparent for a great deal of the radical surgery of many pelvic conditions.

ADVANTAGES OF THIS SITE OF TRANSPLANTATION

Leaving for discussion later the technical difficulties and dangers of ureterorectal transplantation, it is well to be convinced that this site of transplantation is preferable to any other. The miserable condition of exstrophy patients has been the motive for many different attempts of plastic repair. No mechanical device intended to protect the sensitive exposed mucous membrane and to collect the urine has been satisfactory, so that ever since Simon [5] in 1815 first suggested implantation of the ureters for exstrophy, an amazing number of different types of operation have been suggested. Aside from implanting the ureter directly into the bowel, isolated pieces of uninfected small intestine with the idea it would serve as a bladder, the use of the vagina or gallbladder for the same purpose or resection of the intestine low in the rectum and making a double outlet in the sphincter ani, one for urine and the other for feces, have been at various times attempted but have all failed as a result of the stasis of urine inherent in any of these procedures. Transplantation to the skin carries the objection of the necessity of wearing some kind of collecting device, and in the great majority of these cases also stricture formation and ascending infections are frequent. The most successful type of skin transplantation has been nephrostomy, in which a suitable apparatus can be fastened to the back and the urine collected by tubes that lead around to the front so that the patient can empty the artificial bladder as in a normal manner.

Young [6] has himself highly recommended nephrostomy in indicated conditions. As a permanent procedure it of course is not equal to intestinal transplantation, which gives continence, provided the dangers of the latter can be surmounted. There are good reasons why the rectum is the preferable site for direct implantation. The cloaca of amphibia, reptiles and birds forms the common receptacle for urine and feces, and the lowest subclass of mammals have the same condition. It has even been reported as an anomaly in the human fetus.[7] Fowler [8] has emphasized the physiologic significance of an empty rectum in the normal state between the acts of defecation, as pointed out by O'Beirne,[9] but these observations have not been entirely confirmed. However, in those cases in which ureters have been transplanted into the rectum there may be formed for all practical purposes two receptacles, the sigmoid for the storage of feces and the rectum for that of the urine acting only as a temporary receptacle for feces. Alvarez [10] has suggested that in these cases the irritation through accumulation of urine in the rectum may arrest the normal downward movement of feces sufficiently to cause a fecal collection in the transverse colon until that time in which the colonic irritation predominates and rushes the feces out in a bowel movement. Alvarez also regards the stormy sigmoid as unfit for ureteral implantation, as it is a free and very motile stretch of bowel. It worked very successfully, however, in case 1 (fig. 1). All things considered, the rectum is the preferable part of the bowel for implantation. Skin transplants have the objection of not providing continence and do not sufficiently reduce the dangers of obstruction from stricture or of ascending infection.

DIFFICULTIES

The difficulties of successful intestinal implantation of the ureter are both inherent and technical, and immediate and remote. The inherent objections are the placing of ureters into a continuously and highly infected field and in a position that removes them from subsequent treatment and study by urologic methods. The technical difficulties of immediate significance are not so great but that they can be overcome. The spread of infection, peritonitis, fecal fistula are dangers that are now little to be feared, thanks to Coffey's [11] suggestions. The obstruction from the immediate edema at the site of implantation unless means of protection are taken may lead to an acute and early ascending pyelo-

4. Coffey, R. C.: Treatment of Cancer of the Rectum, Ann. Surg. **76**: 500-514 (Oct.) 1922.

5. Simon, J.: Ectopia Vesicae: Operation for Directing the Orifices of the Ureters into the Rectum; Temporary Success; Subsequent Death; Autopsy, Lancet **2**: 568-570, 1852; Congenital Imperfection of the Urinary Organs Treated by Operation, Tr. Path. Soc. London **6**: 256-258, 1855.

6. Young, H. H.: Text-Book of Modern Urology, Philadelphia, W. B. Saunders Company, to be published.

7. Gerster, cited by Kelly and Burnam, in Diseases of the Kidneys, Ureter and Bladder **2**: 348, 1914. Richardson: Phil. Tr. Roy. Soc. London, abridged **6**: 45, 1809; No. 337, article 18, p. 167.

8. Fowler, G. R.: Implantation of the Ureters into the Rectum in Exstrophy of the Bladder, with a Description of a New Method of Operation, Am. J. M. Sc. **115**: 270-276, 1898.

9. O'Beirne, cited by Fowler (footnote 8).

10. Alvarez: Personal communication to the author.

11. Coffey, R. C.: Physiologic Implantation of the Severed Ureter or Common Bile Duct into the Intestine, J. A. M. A. **56**: 397-403 (Feb. 11) 1911; and from recent address before the Academy of Medicine, San Francisco, and personal communications to the author.

nephritis or anuria, which has been guarded against heretofore by transplanting one ureter at a time. This temporary obstruction, however, is a real danger when there is only one kidney and it otherwise necessitates two operations which for some of the conditions, as indicated above, is considerable of a burden in preparation for the final operation. It means three major operations, the third and last the hardest. The remote dangers are obviously those of a pyelonephritis and of stricture or other obstruction leading to destruction by

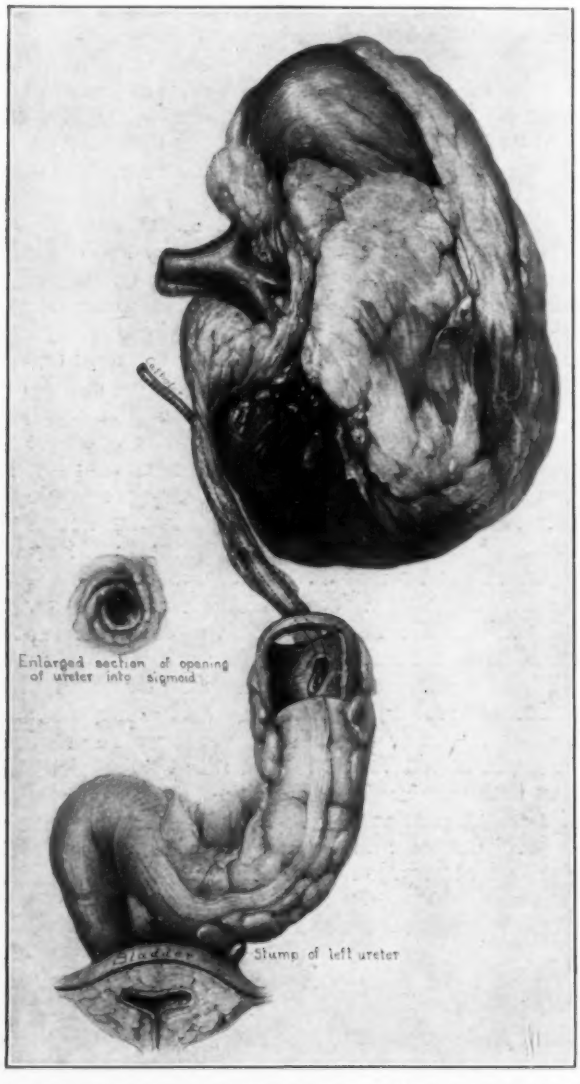

Fig. 1.—Finding at necropsy in case 1, six years after ureterosigmoidoneostomy: The ureteral opening in the bowel is in perfect condition and quite patent. The ureter was still dilated as about at time of transplantation. The stone that had produced the anuria causing death was located at the ureteropelvic juncture. Kidney showed moderate hydronephrosis, probably more the effect of the stone blockage.

hydronephrosis or secondary atrophy. Most of these difficulties could easily be removed by implantation of the ureter into the sterile small intestine, but this is prohibitive because of complete urinary reabsorption.[12] The propriety and risk at any time of ureterorectoneostomy is brought home by this problem: Given an individual with two healthy kidneys, the lower ureter of one of which has been accidentally injured or cut necessitating transplantation, ligature or nephrectomy, which would you choose?

12. Hinman, Frank; and Belt, A. E.: An Experimental Study of Ureteroduodenostomy, J. A. M. A. **79**: 1917-1923 (Dec. 2) 1922.

DEVELOPMENT OF TECHNIC

In the particular technic of transplantation, the greatest progress has come within the last few years. The surgical problem is to remove the dangers as just mentioned and be able to transplant the two ureters at one operation, which would be a big advantage if safe. It was in 1815 that Simon[5] first suggested the advisability of uretero-intestinal transplantation, but the procedure has never been general. Smith,[13] in 1879, advocated a carefully planned surgical procedure unsuccessfully, and no greater success was obtained by such eminent men as Trendelenburg.[14] A great stimulus came from Tuffier's[15] suggestion of implanting the ureter with its normal sphincter intact, a procedure practically applied by Maydl[16] in 1892 and rather widely made use of since, though not much within recent years. Anastomotic buttons after the manner of intestinal anastomosis have also been variously tried, notably by Frank[17] and Boari.[18] The modern method really started with Fowler's[8] suggestion in 1898, with the attempt to form a sphincter with valve action. Martin[19] added some technical improvements with the same idea of sphincter formation, the essential feature of which is that a direct ureteral implantation is made with the ureter running along an oblique muscular canal, perforating the bowel through a small opening in the mucosa.

The most valuable technical advances have come with the highly commendable work of R. C. Coffey, who places emphasis on the formation of a valve action as is normally present in the oblique passage of the ureter into the bladder, and who attempts to duplicate this valve of nature by having the ureteral end pass obliquely under the rectal mucous membrane for a few centimeters before opening into the intestinal lumen. This technical perfection satisfies the anatomic requirements fairly satisfactorily except that in those pathologic cases of large hydro-ureters it is much more difficult of execution, and in my experience it is questionable whether any true valve can be made to function in these cases in which the ureter is markedly dilated or as large as one's little finger. In the first hydro-ureter that I transplanted (case 1 above), either the attempt to follow Coffey's technic too literally or obstruction from edema led to an anuria necessitating reoperation on the third day, at which no effort of valve formation was made but the hydro-ureter was implanted directly and comfortably a little higher up and into the sigmoid just as one would do in ureterocystoneostomy. This particular technic was in this one case at least highly successful; the patient lived comfortably for six years, and at the necropsy a perfect result so far as the transplant is concerned was found. It was noted also that

13. Smith, P.: An Account of an Unsuccessful Attempt to Treat Extroversion of the Bladder by a New Operation, St. Bartholomew's Hosp. Rep. **5**: 29-35, 1879.

14. Trendelenburg: Zur Operation der Ectopia vesicae, Zentralbl. f. Chir., 1885, pp. 857-860; Ann. d. mal. d. org. gén.-urin., 1903, p. 782.

15. Tuffier, quoted by Gayet and Cavaillon: Etude expérimentale et clinique de l'exclusion rénale, Ann. d. mal. d. org. gén.-urin. **22**: 679, 1904.

16. Maydl, K.: Ueber die Radikaltherapie der Ectopia vesicae urinariae, Wien. med. Wchnschr. **44**: 1112-1115, 1169-1172, 1209-1210, 1256-1258, 1297-1301, 1894; Neue Beobachtungen von Ureterenimplantation in die Flexura romana bei Ectopia vesicae, ibid. **46**: 1241-1247, 1333-1336, 1373-1378, 1896; Weitere Erfahrungen über Implantation der Ureteren in die Flexur bei Ectopia vesicae, ibid. **49**: 249-255, 304-310, 360-367, 1899.

17. Frank, J.: A New Contrivance for Intestinal End-to-End Anastomosis, M. Rec. **50**: 469-473, 1896.

18. Boari, A.: Manière facile et rapide d'aboucher les uretères sur l'intestin sans sutures, à l'étude d'un bouton spécial: recherches expérimentales, Ann. d. mal. d. org. gén.-urin. **14**: 1-25, 1896.

19. Martin, F. H.: Implantation of Ureters in Rectum: A Method having for Its Object the Making of Subsequent Infection of the Ureters and Kidneys Impossible, J. A. M. A. **32**: 159-161 (Jan. 28), 709-710 (April 1) 1899.

the ureter had shrunken practically none in this six year period (fig. 1).

Coffey also has recently perfected a means of preventing local spread of infection which renders the implantation much safer than heretofore. The means is quite simple; after the rectum has been freed it is clamped as high as conveniently can be, and through a rectal speculum previously placed through the anus the lower bowel is flushed clean by means of a trocar inserted under surgical asepsis by the operator into the bowel just below the clamp. In this way all the contents of the rectum can be flushed out and the cleansed rectum can then be packed with sterile gauze, so that there is no possibility of a gush of fecal material into the operative field at the time the rectal mucosa is opened for ureteral implantation. This is what occurred in a minor degree in one of the cases mentioned above in which the patient died of bronchopneumonia and showed at necropsy a localized peritonitis. Coffey has also suggested, and the method has been used successfully by himself and other operators, the use of tubes that are placed in the open ureteral end and then passed down through the rectal speculum to the outside so as to drain the transplanted ureter for the first few days after operation, thus removing the danger of the early obstruction from edema during the time of healing. This method was primarily proposed in order to enable double transplantation at the one operation. Tubes leading directly through the infected rectum, theoretically, at least, promote reflux around them of rectal contents to the renal pelvis. In pathologic kidneys with hydroureters, particularly if only one kidney is present, even these improvements fail to give complete protection against ascending infection. On removal of the tubes, one's bridges, as it were, are burned behind him. No treatment of the isolated kidney is now possible.

In those desperate cases in which one reasons that the patient may die after ureteral transplantation but he most certainly will die if the ureter is not transplanted, it would seem more logical from a surgical standpoint to perform nephrostomy as a preparatory measure to subsequent ureteral transplantation, should conditions then justify it. The lumbar drainage leaves an avenue of direct treatment and free outlet for the urine from the kidney. As a matter of fact, one could now do as he wished with the lower end of the ureter. Such nephrostomy drainage would do away with the danger of early ascending infection and of obstruction from the early edema during the time of healing, thus obviating the need of tubes and their dangers.

Through such a nephrostomy opening after ureteral transplantation the lower ureter can be flushed from above in the natural direction and, if necessary, its lower end gradually dilated by passage of catheters through the nephrostomy opening. In this treatment, of course, catheters should be drawn on through the rectum, and not back by way of the nephrostomy opening.

I have used preliminary nephrostomy in two cases of advanced tuberculosis of the bladder, one already mentioned, in which renal function had dropped but in which we were unable to demonstrate tuberculosis of the remaining but progressively atrophying kidney. Although the patient was in a very weakened condition and transfusion had to be done before nephrostomy, the intestinal transplantation two weeks later occasioned no reaction, and convalescence has been uneventful. In the other case the kidney was drained for almost three months through the nephrostomy tube in order by putting the bladder at rest to promote healing. But, there being no improvement, the ureter was finally and successfully implanted into the rectum.

Fig. 2.—Appearance of kidney removed at necropsy in case 1: There was no evidence of tuberculosis, and subsequent careful microscopic search failed to find any. The renal parenchyma was in unusually good condition in view of the period of anuria and the irritation incident to the stone obstruction. The hydronephrosis is partly the result of the original obstruction at the ureterovesical end before implantation of the ureter into the intestine but mostly from the more recent stone obstruction.

INDICATIONS

It would hardly be indicated to perform nephrostomy in all cases in which ureteral transplantation seems indicated. In exstrophy when the ureters are usually of normal size and function, intestinal transplantation by the perfected method of Coffey is simple and usually quite satisfactory so far as immediate results are concerned. I have several patients now alive for many years in perfect health and comfort, the longest one eight years, the last examination of whom showed fairly normal function by rectum. Another patient who had both ureters transplanted two years ago has just had the bladder resected and a plastic operation done at the vulva. She has been in school and in apparently perfect health. A large series of successful cases are reported from the Mayo Clinic and by Lower and

others.[20] However, ureterorectoneostomy is not the final surgical word in exstrophy. But in the acquired conditions in which ureteral transplantation is indicated, particularly if only one kidney remains and its ureter is hypertrophied and dilated, preliminary nephrostomy is a safeguard that will materially lower the immediate mortality of the procedure and greatly promote its ultimate success.

384 Post Street.

SUBCAPITAL FRACTURE OF THE NECK OF THE FEMUR*

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The question of the proper treatment for all varieties of fracture of the neck of the femur seems at last to have been settled. In other words, the abduction treatment—the Whitman method—has been accepted by surgeons acquainted with the treatment of fractures.

The subject of fracture of the neck of the femur in general, however, is still open to discussion. To make the subject as clear as possible, I think it advisable to adopt, instead of the time-worn and somewhat vague intracapsular and extracapsular fracture, the more definite French terminology. Fractures of the neck of the femur are classified by Delbet as (1) subcapital, (2) transcervical, (3) cervicotrochanteric and (4) pertrochanteric, as illustrated by figure 1.

This classification is important because opinion seems to be unanimous that the last two forms of the fracture will unite under any form of treatment. The application of the abduction method to them, therefore, is of importance merely in regard to the prevention of the usual deformity, the coxa vara that insures the patient, in spite of the healing of the fracture, more or less total disability from pain and limp.

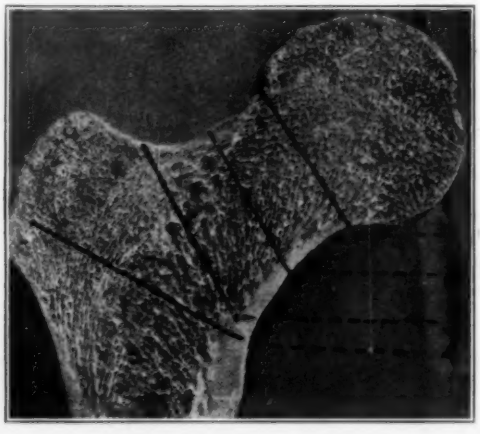

Fig. 1.—Fractures of neck of femur: 1, subcapital; 2, transcervical; 3, cervicotrochanteric; 4, pertrochanteric.

The question of the repair of subcapital and transcervical fractures is still unsettled, and opinions vary from that of Delbet, who states that such fractures never unite under any form of treatment, to the statistics of Campbell, who cites 85 per cent of favorable results. But for its extreme importance to the patient this might seem simply a rather exaggerated instance of the usual differences of medical and surgical opinion, and be allowed to pass as such.

I myself should not have believed that such a sharp division of opinion existed in practice as well as in theory had I not recently heard a surgeon of rather extraordinary capability say that he had never seen a case of true subcapital fracture that united by bone. Dr. Campbell's statistics, as well as those of Scandinavian, German and French authors, are at his disposal. I assume, therefore, that the evidence that he and others like him crave is cases and not statistics, and I therefore report two cases in my own practice in support of the thesis that subcapital fracture of the neck of the femur may unite under one form of treatment.

Fig. 2.—Absorption of neck following a subcapital fracture. (Specimen 188 from the Musée Dupuytren.)

The patient is concerned because, if it be true that such fractures never unite under any form of treatment, the logical course is immediate operation.

In examining the roentgenograms of both these cases, it will be noted that during the course of the immobilization in plaster there has been very considerable absorption of the neck, as illustrated in figure 2, a specimen from the Musée Dupuytren, in spite of which and during and after which, firm, bony union has resulted. This point is of the greatest importance, for two reasons.

The first is that bone grafting operations, nailing or pegging are often advocated for this type of fracture. It will be evident that had a bone graft been inserted in either of these cases its mechanical function could only have been to hold the fragments apart during the process of absorption of the neck exactly in the manner in which the fragments of the specimen in figure 2 are held apart by the metal band, whereas in the abduction method their tendency is to fall ever closer together. If union occurs in such a case when a grafting operation has been done, it must be due to the osteogenic power of the graft and to the gradual replacement of the graft by new bone.

20. Mayo, C. H.: Exstrophy of the Bladder and Its Treatment, J. A. M. A. **69**: 2079-2081 (Dec. 22) 1917. Mayo, C. H.: Exstrophy of the Bladder: Contributions to Medical and Biological Research, Dedicated to Sir William Osler **2**: 1095-1110, 1919. Lower, W. E.: Disposition of Ureters in Certain Abnormal Conditions of the Urinary Bladder, J. A. M. A. **80**: 1200-1204 (April 28) 1923. Mayo, C. H., and Walters, Waltman: Transplantation of Ureters into Rectum: End-Results in Thirty-Five Cases of Exstrophy of the Bladder, J. A. M. A. **82**: 624-626 (Feb. 23) 1924.

* From the Hospital for Ruptured and Crippled, First Division.

It is conceded that in this type of fracture there is always the possibility of nonunion. Opinions as to percentages of nonunion will probably continue to vary, and most patients will probably continue to prefer the risk of nonunion to the risk of operation.

I take this opportunity to point out that if open operation is ever to be recommended as an immediate remedy for such fractures, bone grafting operations are no more free from the element of risk than the abduction treatment itself. I shall always remember a case in which such an operation was performed by an eminent exponent of the method. At the end of three months the patient was urged to walk, whereupon either the union gave way or the graft broke. The patient shortly after died—some said of disappointment. The only operation free from such an element of risk is the reconstruction operation, which does not depend for its success on the reparative powers of the patient.

REPORT OF CASES

CASE 1.—Mrs. S. S., aged 69, seen, July 30, 1921, slipped and fell, two weeks before, injuring the right hip. She was carried home, put to bed, and had no treatment except advice of her physician to get up and walk and move the limb as much as possible. The patient was in good condition. She was rather obese, lay in bed with the right limb rotated outward, slightly abducted, and was unable to move it voluntarily. Measurements from the anterior superior iliac spine to the internal malleolus were: right, 29½ inches; left, 30 inches. Movements of the limb were not tested because the roentgen-ray examination showed a subcapital fracture of the neck of the femur with very slight displacement.

August 1, under gas and oxygen, the shortening was reduced and the limb abducted to its normal limit, placed in hyperextension and slight inward rotation. A long plaster-of-paris spica holding the limb in this position and the knee in slight flexion was applied.

Fig. 3 (Case 1).—Subcapital fracture.

Fig. 4 (Case 1).—Bony union following absorption of half of the neck.

October 15, the plaster was cut away from the posterior aspect of the leg, permitting motion at the knee, which was somewhat limited and painful.

November 1, the plaster was removed entirely. The patient lay in bed. The leg was daily drawn out into full abduction and the patient encouraged to move it. Roentgen-ray examination showed considerable absorption of the neck but apparently firm union.

Jan. 7, 1922, the patient left the hospital, walking with crutches and bearing increasing amounts of weight on the limb.

When last seen at a clinic at the Hospital for Ruptured and Crippled held in November, 1925, the patient walked without a limp. The motions of the hip in all directions were free and painless.

This patient has been shown before the New York Surgical Society as illustrating perfect anatomic and functional recovery following this type of fracture.

CASE 2.—Miss L. G., aged between 50 and 60, at 5 o'clock, Jan. 22, 1925, fell while getting off a Lexington Avenue car. She was unable to rise because of pain and she was brought on a sled half a block and assisted into the house with great difficulty. She was in fair condition. She was rather pale and had an anxious expression. No detailed examination was made because of pain occurring on movement. The right limb was rotated outward at 45 degrees; the knee was slightly flexed; there was apparent very slight shortening. On gentle manipulation, no crepitus was elicited. It was thought that the trochanter was somewhat higher than on the opposite side. Measurements from the anterior superior iliac spine to the internal malleolus were: right, 30 inches, left, 30¼ inches. Roentgen-ray examination showed a typical subcapital fracture of the neck of the femur, the neck displaced upward so that it was on a level with the upper border of the head.

Fig. 5 (Case 2).—Subcapital fracture.

Fig. 6.—Bony union following absorption of the neck.

Under gas, the shortening was overcome and a long plaster-of-paris spica was applied, holding the limb in full abduction, internal rotation and slight hyperextension.

April 20, the plaster was removed. There were a few degrees of motion in all directions at the hip, and apparently firm union.

June 15, the patient left the hospital, walking with the aid of crutches, bearing increasing amounts of weight on the limb.

December 1, the patient was still using crutches on the street because of fear of falling. She was able to make her way about the house with very slight discomfort. She still walked with a slight limp. There was half an inch of shortening, and the extremes of motion at the hip in all directions were somewhat limited and painful. The roentgen ray showed apparently firm bony union.

71 Park Avenue.

Voltaire and Medical Jurisprudence.—There is much to be found in Voltaire's work that will appeal to the medical jurist who is interested in the history of his subject, especially if it be borne in mind that the reform of criminal legislation in France was due to Voltaire (Masmonteil). The trials of Calas, Sirven and Montbailli, the revision of which constitutes the crowning glory of Voltaire, are particularly worthy of study. In both the Calas and the Sirven case, the medical experts appear to have been grossly ignorant and incompetent. —Rolleston, J. D.: *Proc. Roy. Soc. Med.* **19**:89 (Feb.) 1926.

A MICROSCOPIC SLIDE PRECIPITATION TEST FOR SYPHILIS

PRELIMINARY REPORT *

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Our purpose in this report is to describe a microscopic slide precipitation test for syphilis with Kahn's antigen which is as sensitive as the routine three tube Kahn test with the following advantages over that method: 1. It is simpler. 2. It requires less apparatus and much less serum. 3. The results are easier to read.

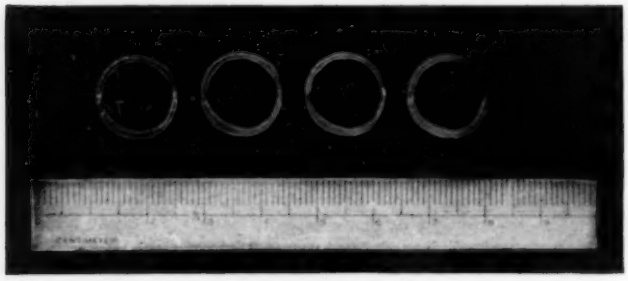

Fig. 1.—Microscopic slide with paraffin rings, slightly reduced.

Since the publication of the first precipitation test for syphilis by Michaelis,[1] in 1907, numerous modifications of antigen and technic have been suggested, especially by Porges and Meier,[2] Bruck and Hidaka,[3] Herman and Perutz,[4] Meinicke,[5] Sachs and Georgi,[6] Dreyer and Ward,[7] Vernes [8] and Kahn.[9] Of these, the Kahn test has apparently received the widest acceptance, giving results, in the hands of numerous workers, in close agreement with the Wassermann test and with the clinical findings.

In commencing work with the Kahn test in this laboratory, we were greatly assisted with the technic by Dr. Kahn, who not only supplied us with antigens and details concerning his method but also gave Miss A. B. Mill of our staff an opportunity of following the work in his own laboratory. In a subsequent communication with Miss Mill we hope to report a large number of parallel Kahn and Wassermann tests. The parallel Kahn and Wassermann tests thus far performed by her (table 4) agree closely.

The Kahn three tube precipitation test, although easy to perform, is somewhat difficult to read without considerable practice and requires 0.45 cc. of serum. Because of the fact that sufficient quantities of serum are not always obtainable or available, some attention has been given to the development of a precipitation test requiring comparatively small quantities of serum. In one of Kahn's publications,[10] there is a record of a micromethod tried by him "with the hope," he states, that it may prove helpful in those cases in which regular quantities of serum are not available. Hanging drop preparations were prepared with minute amounts of serum measured with a capillary pipet and approximately one sixth the amount of antigen measured with a pipet of similar size, employing the usual procedure. After given periods of incubation, the positive serums showed under the microscope clumps of minute globules, whereas in the case of negative serums the mixture appeared homogeneous.

It was observed, however, that this method gave considerably weaker results than the regular one, large numbers of weak serums giving no precipitation reactions with these microscopic quantities. This was found to be due, not to the relatively minute serum and antigen quantities, but to improper agitation of these two substances. For successful precipitation reactions, the serum and antigen must be thoroughly mixed. We have therefore found it more dependable to employ small agglutination tubes for this microprocedure and thus to enable proper mixing of the serum and antigen by shaking.

Another precipitation test (a modification of the Sachs and Georgi test) requiring small quantities of serum was reported by Priestley [11] in 1923. The following is an extract of his technic employing comparatively large plates:

The slide is 29 by 5 cm., cut with a diamond into twenty compartments; this allows of four sera with their serum controls being tested in four dilutions at the same time. Those sera which were positive in these dilutions were then put up in higher dilutions to extinction of precipitation. For the volumes of serum dilutions and antigen, pipets of no. 52 Starrett wire gage were used, one being kept for the serum dilutions and one for the antigen dilution. The sera were put up in dilutions of 1 in 2½, 1 in 5, 1 in 10, 1 in 20, etc., and one drop of antigen dilution added to each except the serum control, which consisted of one drop of neat serum and one drop of saline. Rotation of the slide, either by hand or by means of a clockwork device similar to Garrow's over an angle of 45 degrees on either side of the horizontal, was carried on for five minutes, when the results were read by a

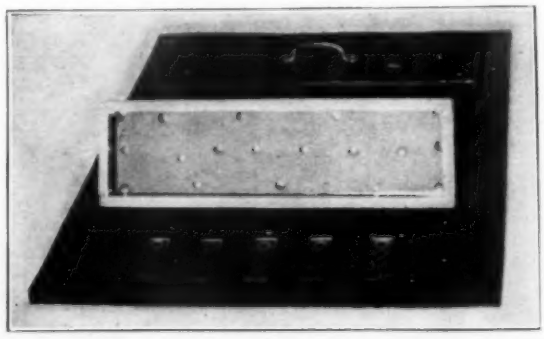

Fig. 2.—Humidor cover for incubating slides (two views), greatly reduced.

watchmaker's lens, and expressed as one, two or three plus according to the size of the flocculi. The antigen used has been a mixture of alcoholic human heart extract and 1 per cent alcoholic cholesterol in the proportion of 3 to 2 parts. The same antigen has been used throughout the Wassermann reaction tests, but in a different dilution. Bordet's antigen plus cholesterol was tried, but appeared to give no better results than the crude heart extract. A dilution of 1 in 5 appeared to give the best results, the antigen being measured into a dry tube and the salt solution slowly dropped into it from a height of 12 inches. Of 500 parallel tests a superficial examination shows agreement in 395 (79 per cent) and disagreement in 105 (21 per cent); and of the latter the Wassermann reaction yields stronger results than the slide

* From the Laboratory Service, Mount Sinai Hospital.

1. Michaelis, L.: Berl. klin. Wchnschr. **44**: 1477, 1907.
2. Porges, O., and Meier, G.: Berl. klin. Wchnschr. **45**: 731, 1908.
3. Bruck, C., and Hidaka, S.: Ztschr. f. Immunitätsforsch., Orig. **8**: 476, 1911.
4. Herman, O., and Perutz, A.: Med. Klin. **7**: 60, 1911.
5. Meinicke, E.: Berl. klin. Wchnschr. **54**: 613, 1917.
6. Sachs, H., and Georgi, W.: Med. Klin. **14**: 805, 1918.
7. Dreyer, G., and Ward, H. K.: Lancet **1**: 956 (May 7) 1921.
8. Vernes, A.: Presse méd. **25**: 704, 1917.
9. Kahn, R. L.: A Simple Quantitative Precipitation Reaction for Syphilis, Arch. Dermat. & Syph. **5**: 570 (May) 1922.
10. Kahn, R. L.: A Simple Quantitative Precipitation Reaction for Syphilis, Arch. Dermat. & Syph. **6**: 332 (Sept.) 1922.
11. Priestley, A. H.: Slide Precipitation Test for Syphilis, Lancet **1**: 1260 (June 23) 1923.

Sachs-Georgi in sixty-one (12.2 per cent), and the Sachs and Georgi than the Wassermann reaction in forty-four (8.8 per cent).

Although the open microscopic slide method of agglutination has been widely adopted for blood typings and bacterial agglutinations since the publication of Vincent's article,[12] we have found no reference in the literature to the use of microscopic slides in precipitation tests for syphilis.

After we had done the Kahn three tube test a few times, it was decided to run as a simple control a microscopic slide test with a technic employed in this laboratory for blood typings and bacterial agglutinations. In spite of various dilutions, the microscopic slide method has agreed closely with routine Kahn and Wassermann tests (tables 1, 2 and 3). In addition to the parallel tests recorded in the tables, many more microscopic slide tests were performed with the purpose of establishing a satisfactory routine procedure. As a result of various modifications tried in 527 tests, the following technic, because of its simple requirements, ease of performance and apparent specificity, is recommended for trial.

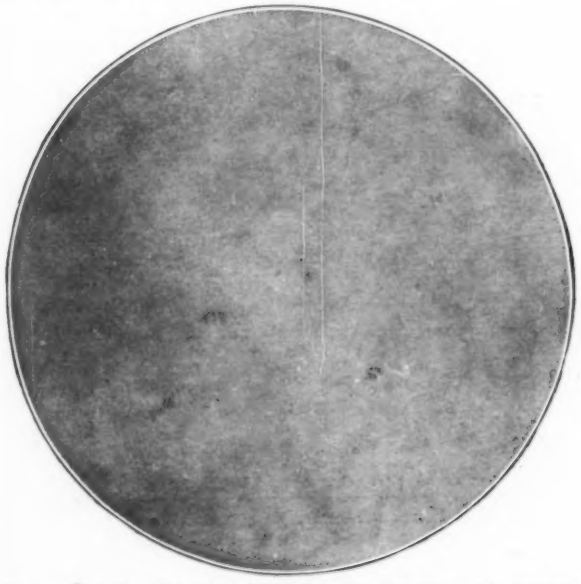

Fig. 3.—Negative slide test (through 16 mm. objective, 12.5 eyepiece).

MICROSCOPIC SLIDE PRECIPITATION TEST

Glassware and Apparatus.—Ordinary microscopic slides are washed in soap and water, rinsed thoroughly in water, allowed to remain in 95 per cent alcohol for a short time, dried and then flamed. After this, four paraffin rings (each with an inside diameter of 11 to 12 mm.) are made on one surface according to the method of Green[13] by transferring a small amount of hot paraffin on a stiff wire (gage 19) wound with thread (or hat wire) bent to the form of a circle (fig. 1).

The pipets needed for delivering the serums are the ordinary 1 cc. pipets graduated in 0.01 cc. The pipets for the antigen are the same as those for the serums with the ends drawn out so that each drop of antigen dilution equals 0.015 cc. The diameter of the tip over all is about 1.25 mm.

Vials for preparing the antigen dilution are similar to those used and recommended by Kahn.

A humidor cover is necessary for the test. The one employed in this laboratory consists of a wooden lid, 16½ by 4 by 1½ inches inside diameter, with a moistened blotter fastened in place with thumb tacks, as shown in figure 2.

12. Vincent, Beth: A Rapid Macroscopic Agglutination Test for Blood Groups, and Its Value in Testing Donors for Transfusion, J. A. M. A. **70**: 1219 (April 27) 1918.
13. Green, G.: Am. J. Pub. Health **15**: 651, 1925.

Antigen.—The antigen and antigen dilution are prepared as for the Kahn test. The antigen titration likewise is done as for the Kahn test. The antigen dilution should be made up just before pipetting the serums. Some antigen dilutions have been found to work only within fifteen minutes of their

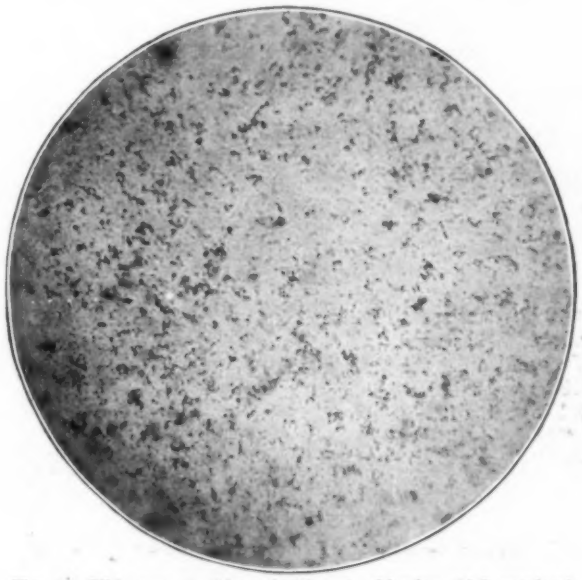

Fig. 4.—Slide test + (through 16 mm. objective, 12.5 eyepiece).

preparation. An average antigen dilution may still be used forty-five minutes after its preparation.

The action of the antigen dilution has been found unsatisfactory when the room temperature and that of the microscopic slides is low; again, false clumping occurs in serum antigen dilution mixtures allowed to dry. Accordingly, it is important to do the test in a warm, humid room (about 80 F. with visible moisture on the windows), which is readily prepared by heating a pan of water after closing the windows and doors. The table top on which the tests are performed

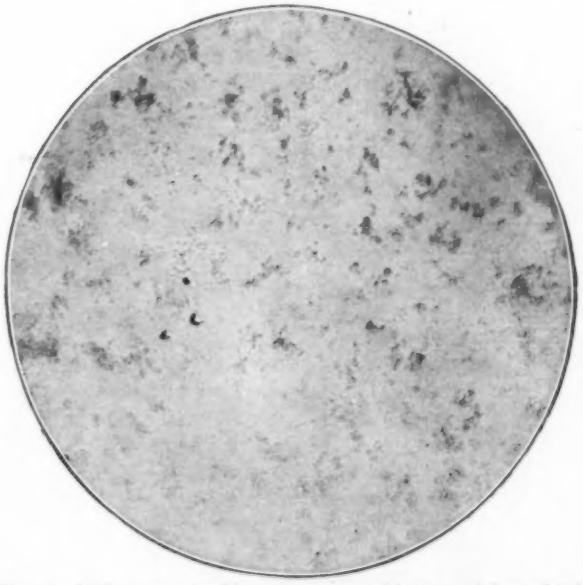

Fig. 5.—Slide test ++ (through 16 mm. objective, 12.5 eyepiece).

should be kept warm. A piece of harness felt three-fourths inch thick is satisfactory for this purpose.

Serums.—These are obtained as for the Wassermann test, care being exercised that they contain no red blood cells or foreign material. Before use, they are heated to 56 C. for one-half hour.

The Test.—Into each ring, 0.06 cc. of the undiluted serum to be tested is delivered from a pipet. It is advisable to work with not more than twelve serums (three slides) at a time. After all the serums are pipetted, 1 drop of Kahn's antigen dilution (0.015 cc.) is allowed to fall into the serum in each ring. After all the antigen is pipetted, the small amount in each ring is evenly distributed by rapidly stirring the mixture with a tooth pick (a new tooth pick with flat end a few millimeters in width is used for each test). After the mixtures are complete, the slides, without further agitation, are placed below the humidor cover and allowed to remain at room temperature for ten minutes. At the expiration of this time, the first slide is removed, rocked and rotated by hand for about sixty seconds (about sixty times) and read immediately. The readings are made through the microscope (16 mm. objective, 10 or 12.5 eyepiece) with the light cut down as in studying urinary sediments and recorded in terms of pluses according to the size of the clumps, as shown in figures 3 to 7. Because of the importance of the test, it is strongly recommended that it be done in duplicate, different antigens being used.

In performing the tests, capillary pipets (drawn from glass tubing) with bulbs holding about 10 drops of fluid may be used instead of those described.

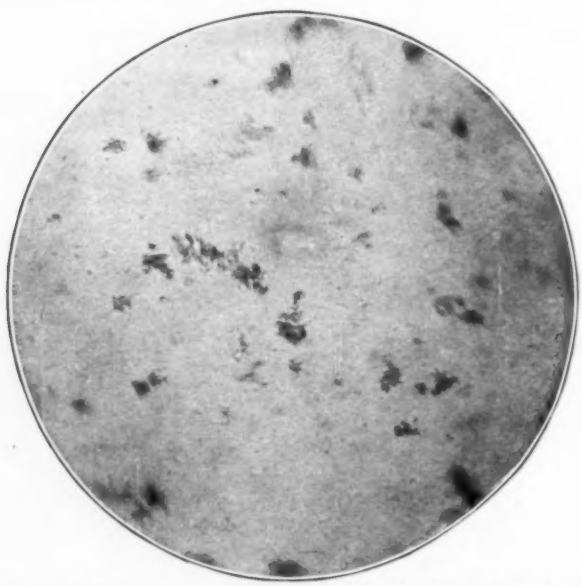

Fig. 6.—Slide test + + + (through 16 mm. objective, 12.5 eyepiece).

COMMENT

The test as described is recommended as the one yielding the best results of the numerous procedures employed in 527 tests, included among which were tests with varying quantities of serum (from 0.01 to 0.06 cc.), antigen dilution (from 0.0075 to 0.03 cc.) rings of various sizes (from 8 to 13 mm.) and incubation periods of various lengths (from five to forty-five minutes) in the open air and in the humidor. The antigens used have been Kahn's standard and special antigens kindly furnished by Dr. Kahn, and also similar antigens prepared according to his formulas.

It should be remarked at this point that the open slide method described above is ideal for the mixture of serum and antigen, contrasting with the hanging drop method tried by Kahn. At the same time, however, the larger surface offers greater opportunity for rapid drying, and, unless this is prevented, false clumping may occur. This danger is completely obviated by incubating the test below the humidor cover.

In the performance of the test by the method recommended, it has been observed that the strongly positive serums require no agitation beyond the initial stirring with a tooth pick, the clumping being almost immediate. The rocking and rotation, however, accentuate the

TABLE 1.—*Two Hundred and Sixty-Eight Comparative Microscopic Slide Tests (Kahn Antigen, Various Quantities Antigen Dilution and Serum) and Kahn Tests*

	Tests	Per Cent
Agreement	226	84.3
Relative agreement	36	13.4
	262	97.7
Disagreement	6	2.3
Total	268	

Positive reaction = ++++, +++ and ++.
Doubtful reaction = + and ±.
Agreement = positive or negative by both methods.
Relative agreement = positive or negative by one method and doubtful with the other.

TABLE 2.—*Three Hundred and Fifty-Seven Microscopic Slide Tests (Kahn Antigen, Various Quantities Antigen Dilution and Serum) and Wassermann Tests (Ecker Antigen, Overnight Icebox Incubation)*

	Tests	Per Cent
Agreement	268	78.1
Relative agreement	51	14.9
	319	93.0
Disagreement	24	7.0
Total	343	

Wassermann anticomplementary, slide test variable, 14 tests = 4 per cent.

TABLE 3.—*Two Hundred and Thirty-Two Comparative Slide Tests and Wassermann Tests (Kahn Antigen Cholesterolized and Noncholesterolized, Overnight Icebox Incubation)*

	Tests	Per Cent
Agreement	177	80.5
Relative agreement	26	11.8
	203	92.3
Disagreement	17	7.7
Total	220	

Wassermann anticomplementary, slide test variable, 12 tests = 5.2 per cent.

TABLE 4.—*Two Hundred and Eighty-Nine Comparative Kahn Tests and Wassermann Tests (Ecker Antigen, Overnight Icebox Incubation)*

	Tests	Per Cent
Agreement	232	82.3
Relative agreement	35	12.4
	267	94.7
Disagreement	15	5.3
Total	282	

Wassermann anticomplementary, Kahn variable, 7 tests = 2.4 per cent.

TABLE 5.—*One Hundred and Ninety-Two Comparative Kahn Tests and Wassermann Tests (Kahn Antigen Cholesterolized and Noncholesterolized, Overnight Icebox Incubation)*

	Tests	Per Cent
Agreement	165	88.2
Relative agreement	12	6.4
	177	94.6
Disagreement	10	5.4
Total	187	

Wassermann anticomplementary, Kahn test variable, 5 tests = 2.6 per cent.

clumping not only in the weakly positive but also in the strongly positive serums.

It has been found that a considerable range in the quantities of serum and antigen can be employed with success. The quantities recommended, however, have been found the most satisfactory.

When compared with the routine Kahn test, the microscope slide test will be found much simpler, requiring less apparatus and for a single test but one-seventh the amount of serum. Perhaps the greatest advantage is the greater ease of reading the results. The completed test is easily viewed through the microscope, and the results, appearing as in the accompanying illustrations, are much more striking than those of the Kahn test.

The test should be of particular value when only small quantities of serum are obtainable and when, as in emergency blood transfusions, prompt knowledge of the presence or absence of syphilis in the donor is desirable.

Comparative results of microscopic slide precipitation tests as described, Kahn tests, and Wassermann tests are given in the tables.

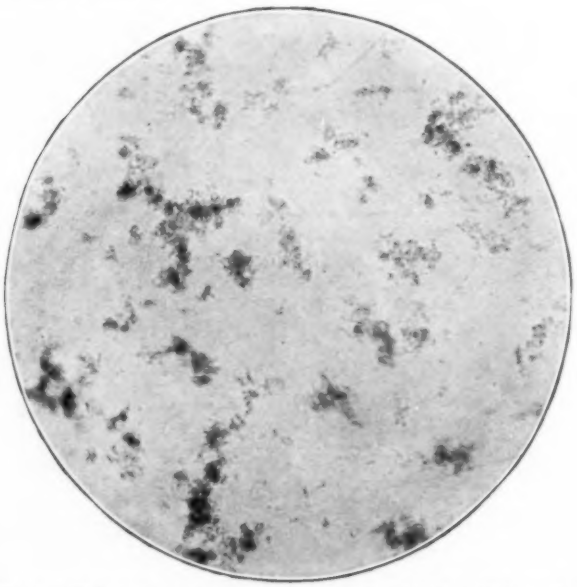

Fig. 7.—Slide test ++++ (through 16 mm. objective, 12.5 eyepiece).

As will be seen from the tables, there is a close agreement between the microscopic slide precipitation test, the Kahn test and the Wassermann test.

CONCLUSION

The microscopic slide precipitation test for syphilis with Kahn's antigen described in this report is as sensitive as the routine three tube Kahn test and has the following advantages over that method: 1. It is simpler. 2. It requires less apparatus and much less serum. 3. The results are easier to read.

Insomnia a Bad Habit.—Insomnia or sleeplessness is, in most instances, a bad health habit that can be cured without an undue expenditure of effort, if the will is present to conquer it. There is no great danger in staying awake at night if the wakefulness is not caused by actual pain, disease, infection, or a necessity which permits of no relaxation for long hours.—Wood, T. D., and Dansdill, T.: By-Ways to Health, 1925, p. 88.

MASSIVE INTRAPERITONEAL HEMORRHAGE

FROM A RUPTURED PAPILLARY ADENOCYSTOMA OF THE OVARY

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BOSTON

In 1924, I [1] had the opportunity of looking up the subject of intraperitoneal hemorrhage of ovarian origin. In reviewing the literature from 1900 to 1924, I found no mention of the rupture of a papillary adenocystoma of the ovary as the specific cause of a massive hemorrhage. These growths are usually multilocular, and are commonly associated with free fluid in the abdominal cavity and with secondary peritoneal involvement, although ascites may be absent as long as the papillary masses remain within the cyst cavity. On perforation of the cyst, the papillary growths spread over the surface of the neoplasm, and invade the uterine and pelvic peritoneum, and finally the parietal peritoneum and that covering the abdominal organs. Extensive involvement of the peritoneal cavity is looked on as a malignant condition, although this is not always so, since the secondary peritoneal masses have been known to disappear following the removal of the original cyst.

A case of life-endangering bleeding from such a cyst came to my attention in May, 1924, and forms the basis of this report.

REPORT OF CASE

History.—Mrs. S. L., aged 66, was seen in consultation at her home, May 10, 1925, and was admitted to the Carney Hospital gynecologic service on the same date. Her complaints were pain in the abdomen, abdominal distention, and constipation of two days' duration. Her father had died of an accident; her mother, of cancer of the stomach, at the age of 79; one brother, of pneumonia, at 54 years of age (ten years previously); one sister, of cerebral hemorrhage, at 57 years of age (nine years previously). Two sisters and one brother were living and well; there were no chronic diseases in the family. The patient had influenza and bronchopneumonia in 1918, and she had a trachelorrhaphy performed eighteen years previously. Menstruation was established when she was 15; the periods were regular, of the twenty-eight day type, and lasted from four to five days, without pain. She had reached the menopause fourteen years before admission, and had had no vaginal bleeding since. The patient had been married forty-one years; her husband was living and well, and she had five living children, the oldest being 38 and the youngest 27. She lost one child at the age of 6 months, the cause of death being given as convulsions. Her first three deliveries were instrumental; the others were normal. The puerperia were normal. Three months before I saw her, the patient felt a mass in the abdomen, which she described as floating, especially when she changed her position. There was no distinct pain or discomfort until the day before admission, when she began to complain of gas pains, accompanied by progressively increasing distention. At this time she began to have a bloody vaginal discharge. She was given an enema at home, but this was not effectual and did not relieve the distention or the pain, which seemed to be general in the abdomen. The history was otherwise negative.

Examination.—The patient was emaciated, in a state of shock, had an anxious expression, and was apparently suffering a great deal of pain; the respirations and pulse rate were increased, and she was anemic in appearance. The head, lungs and heart were normal.

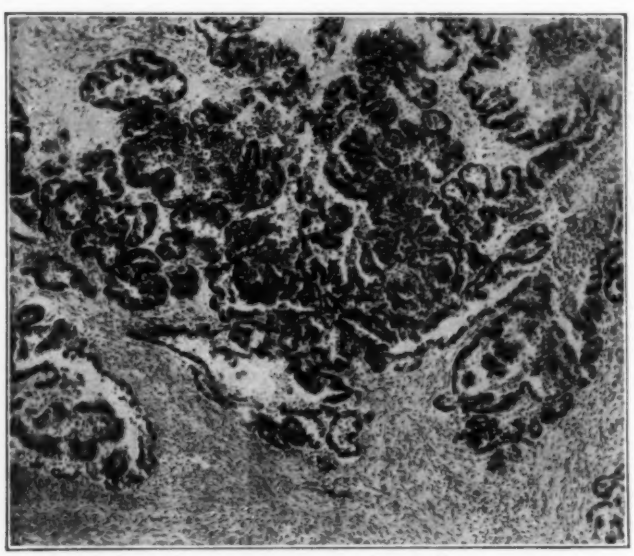
The abdominal examination showed marked distention and extreme rigidity; the abdomen was tympanitic in the center,

1. Phaneuf, L. E.: Intraperitoneal Hemorrhage from Ruptured Ovarian Cyst, J. A. M. A. **83**: 658-662 (Aug. 30) 1924.

but dull in the flanks. The distention was symmetrical, and palpation suggested a mass which was probably connected with the uterus. There was so much pain on palpation that this was not satisfactory. There was marked spasm of both rectus muscles.

The vaginal examination revealed a large mass filling the pelvis, and probably having its origin on the right side of the uterus. The culdesac of Douglas was bulging, and probably contained fluid. There was a bloody vaginal discharge. The pelvic examination was unsatisfactory, because of the pain elicited in the attempt to differentiate the pelvic organs.

Operation.—May 10, under ether anesthesia, a median abdominal incision was made from the symphysis to the umbilicus. When the abdomen was opened there was a gush of fresh blood. The abdomen contained about 2 liters of fluid and clotted blood. The pelvic peritoneum and the small and large intestines were markedly distended, and were covered with numerous white tubercles suggesting malignant disease. On the right of the pelvis, a large ovarian cyst covered with papillary projections was found; this had ruptured and blood clot filled the rent. The pedicle was clamped and tied, the cyst was removed, and the blood was evacuated. The uterus, the left adnexa and the right tube were also



Papillary adenocystoma of ovary; × 100.

covered with papillary masses. The abdomen was quickly closed in layers, and the patient left the operating room in fairly good condition.

Convalescence.—The patient made a good ether recovery; she had some nausea and vomiting, and complained of pain in the region of the incision. The pulse was of fairly good quality. The distention had decreased the day after operation; the pain was much less; the temperature was 100.4, and the pulse 100. The patient was given physostigmin sulphate, 1/50 grain (1.3 mg.) hypodermically every four hours for four doses, and was given glucose solution, 250 c.c., every four hours by rectum. May 16, she felt weak; the distention was under control; the temperature was 101.8; the pulse was 120; there was no pain or vomiting, and the patient was thirsty and was taking fluids by mouth freely. The skin was cold at times. May 19, the sutures were removed; the incision had healed by first intention; there was no induration or tenderness of the incision. May 23, the patient felt well; the pulse, temperature and respirations were normal. May 28, the seventeenth postoperative day, the patient was allowed out of bed, and she was discharged on June 1, at which time the incision was dry and well healed; there was no induration or tenderness, and the temperature and pulse were normal. The vaginal examination showed a small uterus in second degree retroversion; the lateral vaults were clear, and there was no pelvic tenderness.

Pathologic Report.—Examination of the specimen was made by Dr. F. B. Mallory. It consisted of a collapsed cystic tumor mass which measured about 20 by 10 by 5 cm., with many cysts filled with fluid and papillary outgrowths from the walls. In places it showed extensive necrosis. Microscopically, the tumor consisted of papillary branching stalks of vascular connective tissue covered with a layer of cylindric cells, as shown in the accompanying illustration. The diagnosis was typical papillary adenocystoma of the ovary.

Subsequent Notes.—June 20, the patient, who had gone to Brooklyn, reported that she was convalescing satisfactorily, was free from pain, and was out every day. July 7, her husband stated that she was comfortable in every way except for a certain amount of gaseous eructations after meals, but he asserted that she had been subject to those for a number of years. August 1, the patient reported that she continued to improve, went out shopping alone daily, had gained 1 pound (0.5 kg.) in the previous three weeks, was eating and sleeping well, and was generally doing well.

COMMENT

When this patient was first seen, the clinical picture was that of an ovarian tumor, ascites, and intestinal obstruction. A severe hemorrhage was not suspected. The state of shock was ascribed to the obstruction, while the anemic condition of the patient was thought to be due to malignancy and cachexia. She made a surprisingly good recovery, and her constant improvement since operation gives the hope that she may be classed in the group of cases in which the secondary peritoneal involvement disappears after the removal of the primary tumor.

395 Commonwealth Avenue.

MEASLES TOXIN

ITS PREPARATION AND APPLICATION AS A SKIN TEST, AS AN IMMUNIZING AGENT, AND FOR THE PRODUCTION OF AN ANTITOXIN *

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AND
L. W. FISHER, B.S.
DETROIT

This is a preliminary report of the preparation of measles toxin from a micro-organism isolated by us in pure culture from the blood of patients in the early stages of the disease.

The micro-organism is characterized as a small, gram-positive, aerobic, green producing streptococcus, appearing both in pairs and in chains, which produces an extracellular or soluble toxin specific to measles.

In obtaining this organism, about 10 cc. of blood, drawn directly from the median cephalic vein, was planted in 0.25 liter flasks of Hibler medium, incubated twenty-four hours and plated directly on sheep blood agar. The plates were incubated aerobically twenty-four hours and planted from that to blood agar slants or into 0.2 per cent glucose broth.

The organism we have isolated differs from that described by Tunnicliff, in that it is an aerobe growing luxuriantly in the presence of oxygen and that it produces a soluble toxin specific to measles.

In order to distinguish the streptococcus isolated by us from any organism previously described, as so many

* From the Medical Research Laboratories, Parke, Davis & Co.
* This work was made possible through the courtesy of Dr. Henry F. Vaughan, commissioner of health, the officers of Herman Kiefer Hospital, and especially through the assistance of Dr. B. B. Bernbaum and Dr. E. Martmer of Herman Kiefer Hospital and Dr. R. W. Pryer, director of the board of health laboratories, Detroit.

have been found in the blood of measles patients, we have called it *Streptococcus morbilli.*

In the preparation of measles toxin, the streptococcus in question was planted in 1 liter flasks of 0.2 per cent glucose broth and incubated six days, the flasks being agitated every twenty-four hours. A luxuriant growth resulted which, on passing through a

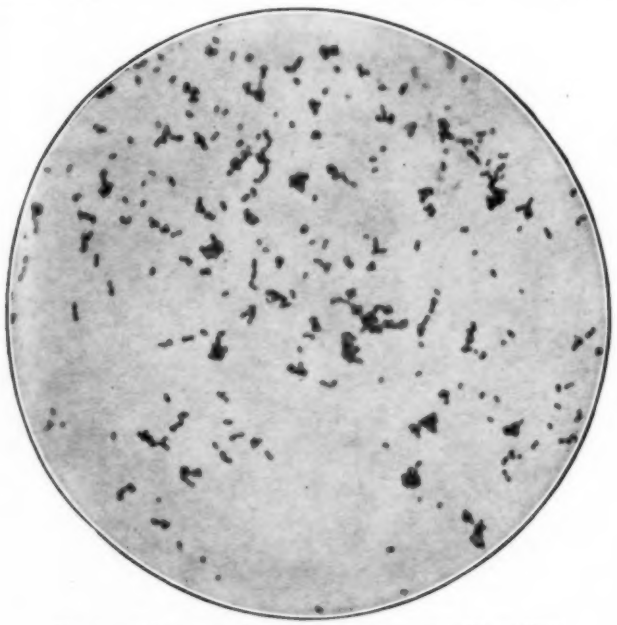

Fig. 1.—Appearance of organism as grown on solid medium.

Berkefeld W candle, gave a toxin of the strength of 5,000 skin test doses per cubic centimeter. To the toxin, 0.5 per cent phenol (carbolic acid) was added as a preservative.

Proof of the presence of toxin in broth filtrates of our organism, evidence of the specific relationship of this toxin to the disease, and proof of the etiologic relationship to measles of the organism from which it was obtained are shown in the experiments reported here. These experiments were carried out on persons susceptible and those immune to measles, as well as on persons suffering with the disease; also on rabbits and other animals.

1. Persons with no histories of measles gave positive skin reactions, on intracutaneous injections of 0.1 cc. of a 1 : 500 dilution of the toxin, showing that they were sensitive to the toxin. Out of thirty-five tests on persons giving negative histories, fourteen gave positive skin reactions to intracutaneous injections of the toxin.

In carrying out the skin test, 0.1 cc. of the toxin was injected intracutaneously, according to a technic similar to that for the Schick or Dick test, and a reaction 1 cm. or more in diameter was considered positive. All tests were controlled by injecting on the other arm toxin heated for one hour at boiling temperature or neutralized with convalescent serum. Measles antitoxin obtained from an animal immunized with the toxin was also used as a control. Readings were taken at the end of twenty-four or forty-eight hours.

In some instances, false control reactions were encountered when persons were sensitive to the serum used as a neutralizing medium.

2. Persons giving positive histories of measles did not react to intracutaneous injections of the toxin.

Thirty children were tested and in no instance was a positive test recorded. Two adults out of thirty, however, with positive histories have so far reacted positively.

3. Patients in the preeruptive and early stages of the disease gave positive skin reactions to the toxin, while those in the later stages, and especially convalescents, gave negative skin reactions.

In hospital practice it is almost impossible to find a case of measles in the preeruptive stage, but out of fifteen cases obtained as early as possible, seven gave positive reactions and none of the late and convalescent cases, twenty-four in all, reacted to the toxin.

4. When mixed with measles convalescent serum, the toxin will not produce a positive skin reaction in susceptible persons, showing that the convalescent serum neutralizes the toxin. Many of the controls were prepared by mixing measles convalescent serum with the toxin, and in most instances the reaction was negative.

5. When mixed with serum from an animal immunized with the toxin, in other words an artificially prepared antitoxin, the toxin will not produce a positive skin reaction in susceptible persons. This shows that this toxin is capable of stimulating the production of an antitoxin and that this antitoxin has the same neutralizing properties for this toxin as has measles convalescent serum.

This test was carried out on twelve susceptible persons, and in every instance the toxin was neutralized by the antitoxin to such a degree that there was no sign of a reaction on the control arm.

6. When mixed with scarlet fever antitoxin or normal horse serum, the toxin was not neutralized.

Control tests were positive when we used scarlet fever antitoxin and normal horse serum, showing that these serums did not neutralize the toxin.

Fig. 2.—Appearance of organism as grown in broth medium.

7. Persons giving positive reactions to intracutaneous injections of the toxin are made to give negative reactions by subcutaneous injections of measles convalescent serum.

Two out of four persons showing positive skin reactions were given 10 cc. of convalescent serum, and after two days all four were retested. The two who received the serum gave negative tests, while the two

controls were still positive. This test was carried out by Dr. Martmer of the Herman Kiefer Hospital.

8. A person giving a positive reaction to the skin test was made to show a negative reaction by the subcutaneous injection of the serum of an animal immunized with the toxin, showing that an antitoxin artificially prepared has the same immunizing or neutralizing properties for this toxin as has the serum from a person naturally immune. This is strong evidence of the etiologic relationship of the toxin and streptococcus in question to the disease.

This test was carried out on but one person, but the result was so striking that it was felt that it should be reported.

9. Serum of measles convalescent patients agglutinates suspensions of our measles streptococcus, while negative serum does not.

The serum was from a lot which had been pooled from several convalescent serums obtained from Herman Kiefer Hospital.

Four strains of the measles streptococcus were agglutinated against this serum, and two out of the four reacted.

Fig. 3.—Cutaneous reaction with measles toxin: *A*, measles toxin alone; *b*, measles toxin neutralized with measles convalescent serum; *C*, measles toxin neutralized with measles antitoxin.

10. Intracutaneous injections into rabbits of live cultures of our organism produced severe local infections surrounded by large areas of hyperemia, which at times extended over the entire abdomen and back, appearing very much as a typical measles rash.

About 0.1 cc. of broth culture was injected intracutaneously, and within two days there appeared a large raised area, about 4 cm. in diameter, which next day resulted in an abscess with sloughing. One rabbit showed a distinct redness over the entire abdomen and back, while others were more or less hyperemic.

11. Intracutaneous injections of killed cultures of this organism into the rabbit produces at the site of injection a large local reaction not unlike the reaction following the injection of the live organism into the rabbit and the toxin into the human subject.

In every instance, rabbits injected intracutaneously with killed broth culture of the organism showed a reaction about the size of a quarter with, in some instances, a small sterile abscess in the center.

12. Animals injected with the measles toxin will produce serums with antitoxic properties, showing that the toxin is a true extracellular or soluble toxin.

Horses and rabbits were injected subcutaneously with the specific toxin, in a manner similar to the production of other well known antitoxins, and proof of the antitoxic properties of the serum from these animals was evidenced by its ability to neutralize the toxin both in vivo and in vitro.

PHRENIC NERVE INJURY IN THE NEW-BORN

REPORT OF CASE *

EMANUEL FRIEDMAN, M.D.
AND
R. S. CHAMBERLAIN, M.D.
DENVER

In 1921, Kofferath [1] reported a case of diaphragmatic paralysis resulting from injury to the phrenic nerve in association with an injury to the brachial plexus. The paralysis of the diaphragm was discovered shortly after birth, and that of the arm twenty-four hours later. Kofferath was unable to find a single reference to this complication detected immediately after delivery. Ehrenfest,[2] in commenting on this unusual complication, observes that Weigert had collected records of thirty cases including one of his own, and that Kofferath's was the only one in which the diagnosis had been verified by fluoroscopic evidence. Reference to Weigert's [3] original article, bearing the caption "Relaxatio diaphragmatica," makes it manifest that he includes related pathologic conditions. His own case bears the earmarks of diaphragmatic paralysis due to phrenic nerve injury; however, whether sustained at birth or not is not quite apparent. From his discussion we are permitted to gather that some of the included cases undoubtedly represent instances of hernia of the diaphragm permitting the escape of the stomach or the bowels into, usually, the left pleural space; and others, of a poorly developed or rudimentary septum, allowing some abdominal viscera to be crowded into the left thoracic cavity. Of the thirty cases, only two concerned the new-born and two more were found in later infancy.

We have made a diligent search of the available literature and standard textbooks and have failed to find any other record of phrenic nerve injury supervening at birth in connection with or independent of a lesion of the brachial plexus. Apart from Ehrenfest, who quotes extensively Kofferath's article, and Finkelstein,[4] who disposes of the subject with a brief reference to the same publication and to the possibility of such occurrence during labor, no others mention this particular complication.

That this cannot be so unusual an occurrence may justifiably be deduced when we take into account the intimate anatomic relationship of this nerve to the brachial plexus. It is a reasonable assumption that any serious injury to the upper cord of this plexus is quite likely to involve in some measure the filaments that

* Read before the Denver County Medical Society, Nov. 3, 1925.

1. Kofferath, Walter: Ueber einem Fall von rechtseitiger erbscher Lähmung und Phrenikuslähmung nach Zangenextraktion, Monatschr. f. Geburtsh. u. Gynäk. **54**, 1921.
2. Ehrenfest: Birth Injuries of the Child, Philadelphia, J. B. Lippincott Company, 1922.
3. Weigert, Richard: Ein geheilter Fall von Relaxatio (Eventratio) diaphragmatica, Beitr. z. klin. Chir., 1920, p. 119.
4. Finkelstein, H.: Lehrbuch der Säuglingskrankheiten, ed. 3, 1924.

make up the phrenic nerve. Kofferath likewise expresses the belief that this type of injury is not very rare. It is almost invariably overlooked, because the most prominent symptom it gives rise to is common to numerous pathologic conditions frequently encountered in the new-born.

CAUSATION AND SYMPTOMS

Kofferath, by implication, conveys the thought that injury to the phrenic nerve may take place without concurrent harm to the plexus. It is our impression that injury to the nerve innervating the diaphragm will be found far more frequently in association with Erb's palsy than as an isolated phenomenon. It is doubtless brought about under the same circumstances and by the operation of the same forces that eventuate in an upper arm paralysis.

An associated involvement of the brachial plexus will of course be made manifest by an upper arm palsy. The result of injury to the phrenic nerve is paralysis of the diaphragm, betrayed principally by disturbances in respiration. Because these and the associated changes are so accurately detailed by Kofferath, and because no other description of this accident in the new-born is available, I shall recount his findings rather minutely. He noticed that soon after birth the respirations were labored as if some obstruction were present in the upper respiratory tract, and the breathing was thoracic in type. The character of the breathing and evidence of injury inflicted by the forceps at Erb's point on the right side suggested the possibility of traumatic phrenic paralysis. The right brachial arm palsy had not appeared until the following day. The fluoroscopic examination confirmed his suspicions by revealing a classic Kienböck phenomenon, so designated since 1898. The right part of the diaphragm occupied an abnormally high position. Inspiration was accompanied by an ascent of this part of the diaphragm and expiration by a descent, the very reverse of what takes place normally. The left side of the diaphragm behaved in the usual manner. In other words, when the right ascended the left simultaneously descended, and vice versa. Furthermore, the right half of the liver moved in unison with the right half of the diaphragm, and the left lobe synchronously with the corresponding half of the diaphragm. During inspiration the heart was pushed toward the left and downward. The mediastinum showed no widening. The liver was not palpable. By the fourth day, the breathing had resumed its normal type, and there was distinct decrease in the arm paralysis. Three months after birth, the child's respirations and its general behavior were normal. At the age of 4 months, the right part of the diaphragm was still a little higher than its fellow, and aside from increased density the lung showed no abnormality. The two portions of the diaphragm moved in the same direction. The right arm showed no weakness. Labor had presented no unusual features, and was not regarded as difficult.

Symptoms are modified when the paralysis occurs on the left side, allowing the stomach or even the intestines to displace the contents of the left thoracic cavity. Such conditions prevailed in Weigert's case. The cough was distressing, respirations seriously hampered, and digestive symptoms were prominently in the foreground. Physical examination at first suggested rightsided pneumonia, but the frequently changing signs on the left side suggested the existence of diaphragmatic hernia; this was confirmed by the roentgen ray. The patient was in a critical condition for six weeks, when slight abatement in the symptoms took place. Improvement thereafter was progressive, and at 1 year of age the child was quite well and all the viscera were found in their normal position.

When injury to the nerve is slight, symptoms may be mild and transitory and therefore not likely to excite attention.

DIFFERENTIAL DIAGNOSIS

A diagnosis of phrenic nerve injury can be made with certainty only by the roentgen ray. The same agency will likewise disclose nearly all the pathologic conditions from which diaphragmatic paralysis is to be differentiated. Clinically, pneumonia is usually characterized by high fever and leukocytosis; enlarged thymus, by stridor; pneumothorax, by unilateral hyperresonance; cerebral injury, by abnormal spinal fluid; atelectasis, by bilateral feebleness of the vesicular murmur; diaphragmatic hernia, by changing physical signs and displacement of the heart, and congenital heart lesion by a pronounced murmur.

PROGNOSIS

Return of function of an injured phrenic nerve is more gradual than of the arm, and even in mild injuries, is probably not complete for several months. If the injury is severe, permanent paralysis may follow. During the height of the paralysis, because of defective pulmonary ventilation, one would anticipate an increased liability to respiratory infections. If both phrenic nerves are injured, the outlook is exceedingly grave.

PROPHYLAXIS AND TREATMENT

The high incidence of all birth injuries may be appreciably reduced by refraining from injudicious intervention with the progress of labor, and by the exercise of greater care in the execution of necessary manual and instrumental manipulations.

Restitution of function to the injured phrenic nerve will be materially assisted and hastened by appropriate treatment of the injured arm. The laissez-faire attitude of the past is no longer tenable. The cooperation of the orthropedic surgeon should be sought; with the aid of suitable appliances, massage, passive movements and electricity, better results will be insured than heretofore. For the relief of dyspnea, oxygen and appropriate cardiac and respiratory stimulants may be indicated. Nutrition must be carefully maintained and the child sedulously guarded against all infections, particularly of the respiratory type, because the supervention of these would almost certainly end disastrously.

REPORT OF CASE

Our justification for recording the case reported here rests on the conviction that it represents in all probability a not very uncommon birth complication. When the possibility of its occurrence is once appreciated, its discovery is accomplished with ease and certainty. In less than four months after the patient under consideration came to our notice, one of us promptly recognized in consultation another, presenting features almost identical with those here recorded.

History.—S., a girl, seen, Feb. 24, 1925, at the age of 7 days, by courtesy of Dr. S. G. Phillips, was the first born of young healthy parents; labor was not prolonged and was assisted by the application of low forceps. It was estimated that birth was delayed one month beyond term, because of hydramnios. The presentation was vertex, in left occipito-anterior position. The baby weighed 6½ pounds (2.9 Kg.) at birth, and no deformities were noted. The breathing showed no change from the normal, and the cry was vigorous and clear.

Soon after birth, it was discovered that the right arm was motionless. Within twenty-four hours, paralysis of the arm had appreciably decreased. The nurse in attendance had observed during brief periods, at irregular intervals, attacks of mild cyanosis during the first few days of life. These were not considered of serious import. The baby nursed well, did not vomit, and the stools were normal. Its behavior and

Fig. 1.—Abnormally high right side of diaphragm due to paralysis of phrenic nerve, seventeen days after birth.

appearance, apart from the arm palsy and the fleeting attacks of cyanosis, were considered normal in all respects.

At the age of 7 days, the infant was well nourished and normally developed, weighing approximately 7 pounds (3.2 Kg.). Its cry was clear and lusty. Turgor of the skin and muscles was good. There were no external evidences of injury. Cyanosis was not present. The visible mucous membranes showed good color. Respirations were not unduly accelerated, nor did they deviate from the normal in any other manner. The right arm showed complete immobility, and movements in the forearm and hand were only slightly impaired. No other paralyses were noted. The knee jerks responded normally. No abnormalities were detected in the heart, lungs and abdomen. The temperature was not elevated.

Diagnosis of an obstetric paralysis was made, and in order to exclude a cerebral injury, spinal puncture was deemed advisable. The fluid did not escape under increased pressure and was normal for the usual tests.

Course and Developments.—March 5, sixteen days after birth: The respirations had often been irregular in rhythm and increased in rate for the past three days. The upper lip was almost constantly bluish. The baby cried only when it was hungry, and the voice was clear and strong. Cough was not present. The appetite and digestion were normal. During the early morning hours of the 5th, the cyanosis became more marked and the circulation enfeebled to such degree that the nurse believed a fatal termination imminent. The response to emergency measures was unexpectedly prompt and permanent. The baby did not appear seriously ill. The upper lip showed a faint cyanotic tinge. During crying, the mucous membrane of the upper lip became blue. Respirations were 72, were unimpeded, and presented a slight irregularity in rhythm. Percussion elicited impaired resonance in the lower posterior two thirds of the right side of the chest, merging into distinct dulness at the base. In this area the breath sounds were enfeebled, and numerous crepitant râles were heard. The heart action was 140 a minute, and no murmur was audible. The abdomen was somewhat sunken; the liver was not palpable and its upper border was at the level of the nipple. The right arm moved freely. The temperature was normal.

A diagnosis of pneumonia was made and a roentgen-ray examination recommended to determine more definitely the extent of the involvement and also to exclude any possible congenital abnormality of the chest. A roentgenogram was taken, March 6, by Dr. Coleman, who found that the right part of the diaphragm occupied a position about 3½ interspaces above that of the left. The right apex showed clouding. The heart was normal in position. The thymic shadow was found moderately enlarged. The following day fluoroscopy of the chest was done, and the paradoxical movements of the two parts of the diaphragm described by Kofferath were clearly visualized. On inspiration, the right part of the diaphragm was pushed upward by the increased abdominal tension exerting pressure in the direction of least resistance; on expiration, with the tension released, the diaphragm resumed its former level. The left part of the diaphragm moved during either respiratory cycle in a direction opposite to that taken by the right, thus giving rise to a seesaw motion. The excursion of the injured side was slightly less than that of the opposite side.

This phenomenon could have arisen only in consequence of paralysis of the phrenic nerve, effected, without any reasonable doubt, by the same means which had injured the brachial plexus on the same side.

March 7: The child had experienced no further difficulties in breathing, and the cyanosis had noticeably abated.

Fig. 2.—Right side of diaphragm in normal position, at age of 8½ months.

We were unable to induce the mother to return for further fluoroscipc observations. A house visit by one of us, April 13, when the child was 7 weeks old, disclosed the following facts: The baby's development, in the mother's opinion, had proceeded normally. The patient was contented, was good natured, cried only when hungry, and was gaining steadily in strength. The weight, two weeks previously, was 7 pounds (3.2 Kg.), and it had gained 13 ounces (400 Gm.) since. The baby had

been fed Dryco for two weeks; the appetite was good, and the digestive disturbances had ceased since the last change in feeding. Breathing had been fast, irregular (about 78 and more hurried after crying) and probably of the Cheyne-Stokes type; but there has taken place a noticeable improvement in this particular in the last three weeks. Stridor had never been present, and cough only very rarely. Hiccup was often noted but was declining in frequency. There had been no cyanosis for several weeks. The baby slept undisturbed for from eighteen to twenty hours a day. No fever was evident at any time. The arms moved perfectly. The infant was strikingly emaciated, with flabby musculature and pronounced inelasticity of the skin. The voice was clear and vigorous, and crying produced slight cyanosis restricted to the upper lip. Respirations were 40, noiseless, but accomplished with a distinct effort. During inspiration an undue degree of expansion of the chest, particularly in the sternal region, was observed with slight epigastric recession. The right side of the chest showed normal resonance, except at the base of the axilla and posteriorly below the level of the sixth rib; the dulness becomes more marked as the base was approached. In the dull area the vesicular murmur was feeble almost to the point of extinction, and crepitant râles were audible. Tactile fremitus during crying was likewise markedly diminished. The left lung showed hyperresonance, with loud breath sounds. The heart action was of good quality, 120 a minute, with no evident displacement. The abdomen was sunken and relaxed and showed normal excursion with respiration. The liver dulness was normal. The temperature was not raised. The arm showed no weakness. The knee jerks were active.

Not until the baby was almost 8½ months old, October 30, were we again able to examine her. The mother stated that the respirations became gradually slower and were considered normal when she was about 3 months old. Cyanosis did not recur. Cough was not in evidence. The baby was at all times contented; both physical and mental development had proceeded satisfactorily, and appetite and digestion were uniformly good. She weighed 16 pounds (7.3 Kg.) and was normal in every respect. She had firm muscles, glowing skin, was able to stand with assistance, and had two teeth. Examination of the chest revealed no departure from the normal. A roentgenogram made by Dr. Coleman showed the right side of the diaphragm a very trifle, perhaps the equivalent of half an interspace, above the normal level. Fluoroscopic examination showed the same range of motion of the two sides of the diaphragm, and they acted synchronously.

SUMMARY AND COMMENT

Shortly after normal birth, with neither difficult nor unduly protracted labor, in which low forceps were used, paralysis of the right arm was discovered in a girl baby. When she was about 13 days old, respirations became hurried and irregular, and occasional cyanosis was noted. Three days later, a severe attack of cyanosis occurred, lasting several hours and necessitating emergency measures. At this date feeble breath sounds and moisture were heard in the right lung, leading to a diagnosis of pneumonia. However, the right side of the diaphragm was high, with a paradoxical movement, as shown by the fluoroscope. Paralysis of the arm disappeared in less than two weeks. Slight cyanosis recurred at times but was unaccompanied by any serious respiratory difficulty. Breathing was fast and irregular for three months. The progress thereafter was satisfactory. When the baby was 7 weeks old, the right lung findings were identical with those previously recorded. At 8½ months, she enjoyed perfect health and showed normal development and normal lungs; the fluoroscope showed no abnormality beyond a very slight elevation of the right half of the diaphragm.

Recognition of the condition was accidental and was effected by means of the roentgen ray. Pressure of the blade of the forceps was probably responsible for the injury.

Kofferath's case differed from ours in that the respiratory disturbances appeared earlier, were mild in character, and disappeared in a few days. Cyanosis and abnormal lung findings were not present. Weigert's patient, contrary to our own, showed leftsided diaphragmatic paralysis, with serious digestive manifestations, and unassociated with brachial palsy.

CONCLUSIONS

Phrenic nerve paralysis is probably not a rare type of birth injury.

Its presence should be excluded in every case of brachial palsy.

The same obligation devolves on the medical attendant when the new-born baby displays cyanosis, irregular labored or accelerated respirations, unilateral diminution of breath sounds with or without moisture, or serious digestive difficulties.

Metropolitan Building.

CHOLECYSTOGRAPHY

H. M. RICHTER, M.D.
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The value of cholecystography as developed by Graham and Cole and elaborated by others is sufficiently evidenced by the rapidity with which its use has become all but universal. The clearness with which calculi are so often visualized, the persistent absence of a positive shadow under certain conditions, the ease with which the emptying time of the bladder can be determined and its malformations portrayed, and the outstanding shadow of the normal bladder have carried the medical profession by storm. Patients with advanced gallbladder disease in whom the clinical history is atypical or difficult to obtain are not rare, and in these cases the new method has diagnostic value. Its use has been of the greatest value to us.

I wish to warn against a source of error in interpreting the normal shadow and to call attention to a peculiar psychologic process by which the use of the method may actually become a positive source of confusion. The source of error lies in the fact that one is likely to visualize gall tract infection in terms of gallstones and advanced pathologic conditions. But gallstones do not spring into existence after the manner of the miltonian conception of Genesis. It has been estimated that the patient with gallstones comes to operation after an average of approximately twenty years of incubation and development of his infection. To accommodate our phraseology to the modern conception of the origin of gallstones, which includes the idea of metabolic as well as infective origin for many cases, we may state the case thus: A properly developed anamnesis, not a history taken perfunctorily by a junior intern, will bring out clinical data of suggestive and diagnostic value extending back over an average period of that length of time in the patient's life.

It is noteworthy that, though we are quite well aware of the long story of the evolution of gallstone disease, it requires a conscious effort to realize, and some do not realize, that it is not gallstone disease at all on which we should focus our attention, but the antecedent condition of which gallstone disease is only a late complication. We have no short and apt desig-

nation for this antecedent pathologic and clinical process. Neither cholecystitis, gall tract infection, gallbladder or gall tract disease is accurately applicable to all forms or stages of the condition. It includes infection, altered cholesterol metabolism, and gallbladder stasis, in varying degree and duration. Either or any two of these may be absent.

Infection usually manifests itself more obviously in the gallbladder; but an associated hepatitis is probably always an early, and possibly at times an antecedent, condition. Lymphatic extension obliterates anatomic boundaries, and the pancreas, duodenum and pyloric antrum probably always participate in the early pathologic picture.

These varied and widespread changes are usually of insidious development, and their gross alterations so slight that even to the experienced eye and finger they may be difficult to recognize at the operating table.

Even the sudden onset of the typical picture of gallstone colic may be quite unassociated with a materially altered gallbladder structure, except during the attack itself. When colic suddenly supervenes on a condition of adolescent cholesterin stones, there is usually but one small stone, rarely more than two or three, of pea size, and totally unassociated with gallbladder changes except during and shortly after the mechanical accident. When the onset is sudden, with extreme pain, during pregnancy or the puerperium, the immediate condition is usually one of acute stasis, with thick, tarlike bile unable to pass the cystic duct. During the acute attack, cholecystography is unnecessary; after it has passed, it is useless, for the gallbladder is practically normal.

During the terminal stage of the evolution of gallstones the new roentgenographic evidence is of great interest, undoubtedly accurate when positive, and often of great value. For some years before the terminal stage is reached, it becomes decreasingly accurate, for with less advanced changes in the gallbladder wall and cystic duct lumen, the dye may reach the gallbladder readily, and its condensing function and contractility must be but partially impaired.

But when we visualize gallbladder disease in terms of early pathologic changes, chronologically at the period of early symptoms of extragastric dyspepsia, when the alert physician really wishes to make a diagnosis, and often can do so on the history alone, we find that not only must cholecystography fail, but the beautifully clear cut roentgenogram of the typically normal gallbladder actually directs the attention away from it as the source of trouble. This danger cannot be overemphasized.

Gallbladder infection is clinically recognizable in a large proportion of cases before stones are present, and long before the gross appearance of the gallbladder is greatly changed or its function materially or persistently deranged. This is so true that, given a satisfactory clinical history, we are willing to remove a gallbladder that appears to be normal when the abdomen is opened.

If we may divide the life history of gallbladder infection into periods, we might say that during the terminal quarter or third or even half of the duration of the disease the anatomic and functional changes in the gallbladder are likely to be portrayed with great accuracy by cholecystography; during the first third or half of the period, there can be no logical basis for assuming even the possibility of demonstrable changes; with an overlapping middle period of variable duration.

To permit ourselves to develop a furor for diagnostic methods at this stage of the disease is very much like waiting for gallstone colic and jaundice as diagnostic aids, which may be likened to making a diagnosis of pregnancy when the head is on the perineum (with apologies to Moynihan).

The outstanding value of cholecystography is fully recognized.

Its inherent dangers must be quite as fully appreciated. These are:

First, that it fosters a tendency to think in terms of late pathologic changes.

Second, that the normal shadowgraph is likely to direct attention away from the actual source of trouble.

104 South Michigan Avenue.

IRON THERAPY IN THE ANEMIAS OF INFANCY

ITS CURATIVE VALUE *

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AND
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The difference between the vital reactions of infants and adults has been emphasized repeatedly. This difference is evident also in the mechanism that governs the supply and the maintenance of the level of hemoglobin in the blood. Most of the iron is laid down in the fetus during the last three months of gestation. Thus the duration of pregnancy, whether complete or prematurely shortened, is a vital circumstance in the new-born infant's supply of iron. This is particularly important because human milk and cow's milk are extremely poor in iron; indeed, "there is less iron in milk than in almost any food. . . . The small amount of iron in milk is the more remarkable since all other inorganic foodstuffs are contained in milk in just the proportion in which they are needed for the growth of the suckling animal. . . . The explanation of this contradiction is that the young animal at birth contains a large store of iron for the growth of its tissues. . . . At least five times more iron is found in the liver of a new-born than in that of full-grown animals." [1] The reserve supply of iron at birth explains the suckling animal's ability to grow rapidly and increase its blood supply in spite of the deficiency of iron in the food. Very briefly, then, this is "the iron depot theory" of Bunge.

Bunge's theory clarified certain clinical observations that have found wide acceptance among pediatricians. Premature infants almost uniformly develop anemia as the result, it is assumed, of the curtailed period allotted to them for the deposition of iron. The anemia of twins is almost as common as that of premature infants and the explanation of its occurrence is similar. A third form of infantile anemia, the so-called alimentary anemia, also may be associated with the iron depot theory, though this is questioned by some writers. This type occurs in infants fed too long on an exclusively milk diet or on a diet predominantly of milk with an inadequate supply of green vegetables or other iron-containing food. According to one theory, this anemia

* From the Pediatric Service, Mount Sinai Hospital.

1. Bunge, C.: Physiological and Pathological Chemistry (translation), 1902, p. 377.

is due to the failure to replenish iron which naturally becomes depleted by the ninth or twelfth month of life. The second theory, championed by Czerny and his pupils, traces the origin of alimentary anemia to the toxic or hemolytic effect of the fat of milk, and the treatment he recommends is purely dietetic.[2]

There are other forms of anemia in which iron therapy is not indicated. Anemia secondary to chronic infections, syphilis and tuberculosis, anemia secondary to prolonged pyogenic infections, and the anemias secondary to avitaminoses, rickets and scurvy, are to be attacked by eliminating or alleviating the cause, not by administering iron.

Continental authors long ago discarded the vague term "secondary anemia" for the anemias of infancy and they have added a more vivid, accurate and descriptive terminology, "anemia ex constitutione," which includes the anemias of premature infants, of debilitated infants and of twins; "anemia ex alimentatione," which refers to nutritional anemia; "anemia ex infectione," which refers to the anemias secondary to infection; and, finally, the anemias associated with special conditions, such as worms and rickets. There is often more than one etiologic factor; an anemic, premature infant is more susceptible than a normal, full term infant to rickets and infections, which, in turn, accentuate the anemia.

This brief classification serves another purpose: to call attention to the futility of grouping all secondary anemias under one heading. Not only are the secondary anemias of infancy different from those of adult life, but they vary among themselves in etiology, pathogenesis, clinical course and therefore also in treatment.

Among recent American authors there is almost universal condemnation of the use of iron in "anemia." It is interesting to trace the origin of this opinion even before questioning the correctness of the view itself.

In general, the belief in the uselessness of iron is based not on iron therapy in man, but on the results in animal experimentation. These results have been applied almost literally to human pathology. As an example, Williamson and Ets performed experiments on animals: inorganic iron was given to rats and dogs that were fed an iron-free and an iron-poor diet; and to a second series of animals made anemic by repeated bleeding. Yet one of their conclusions is this: "In the light of the foregoing experiments, the administration of inorganic iron has no therapeutic value in anemia."[3] It should be unnecessary to point out the inherent difference between the bled adult dog and the naturally anemic premature infant; to be comparable at all, the conditions of an animal experiment must reproduce as closely as possible the clinical picture.[4]

Though many physicians may be prepared to translate verbatim such animal experimentation into terms of human pathology, the pediatrician cannot do likewise; for there are too many carefully controlled clinical observations bearing directly on the anemias of infancy which cannot be put aside lightly. Thus, Lichtenstein's opinion is based on the prolonged observation of ninety-two premature infants, certainly an extremely large number of cases. "Through his investigations and clinical observations he has come to the conclusion that iron therapy is necessary and accomplishes its purpose with or without special diet. . . . The effectiveness of iron therapy confirms the author's opinion of the essential nature of all anemias of premature children as well as of alimentary and of Hayem-Jaksch anemia; the essential causes are a deficient iron depot in the sense of Bunge and a functional inferiority of the hematopoietic apparatus."[5] Space does not permit quotation of the conclusions of Schulthess, in Feer's clinic.[6] His experience parallels our own minutely. Almost identical conclusions may be found in Finkelstein's textbook.[7] The point of view of the French, who use the term "anémie à type chlorotique," is thus summarized by Tixier: "The only interest for the practitioner in the diagnosis of this form of anemia is to understand that in the large majority of cases he should substitute progressively a nutriment rich in iron for the milk regimen, that he can give the parents the assurance that the anemia will disappear with astonishing rapidity under the influence of iron medication, and that finally it is not indispensable to continue iron for a long time."[8]

In America, not all pediatricians have been dominated by the results of experiments on animals. To Schwarz and Rosenthal belongs the credit of having recognized this tendency in the therapy of anemia. In 1920 they said, "As is frequent in medicine, certain laboratory and dietetic principles, decidedly popular, assume complete preeminence at the expense of older and valuable methods of treatment." They conclude that the administration of iron in this condition, "the chlorotic type of anemia," meets with an excellent response.[9]

REPORT OF CASES

CASES 1 and 2.—Hazel and Pearl D., identical twins, were admitted to Mount Sinai Hospital, Dec. 25, 1920, at the age of 1 year, complaining of abdominal distention, malnutrition and pallor. The family history was negative for tuberculosis and syphilis. They were born at term and weighed 6 pounds (2.7 Kg.) at birth. They were breast fed for six months. During their second half year they had attacks of diarrhea, their abdomens had grown progressively larger, and they had become very pale. There had been no bleeding of any kind.

Blood Examinations

HAZEL		PEARL	
Hemoglobin	30%	Hemoglobin	31%
Red blood cells	3,250,000	Red blood cells	2,720,000
White blood cells	25,100	White blood cells	24,900
Polymorphonuclear neutrophils	50%	Polymorphonuclear neutrophils	50%
Lymphocytes	30%	Lymphocytes	40%
Monocytes	9%	Monocytes	5%
Myelocytes	8%	Neutrophilic myelocytes	3%
Myeloblasts	3%	Basophilic myelocytes	2%
Ten normoblasts were found for each 100 white cells counted. Basophilic stippling, poikilocytosis and polychromatophilia were present.		Ten megalocytes and 200 normoblasts were found for each 100 white cells counted. Anisocytosis, basophilic stippling and polychromatophilia were present.	

The children were poorly nourished, very pale, and unable to stand. The superficial lymph nodes were slightly enlarged. Signs of rickets were pronounced; the abdomens were markedly distended and tympanitic; the edge of the liver was felt 4 cm. below the free border of the ribs; the edge of the spleen extended to the crest of the ilium. Specimens of urine were normal. The Wassermann and Pirquet tests were negative.

2. Our results in estimating the urobilin of infants with alimentary anemia showed no increase in hemolysis and failed to confirm Czerny's contention. Bass, M. H.; Denzer, B. S., and Herman, Harold: Urobilin Excretion in Anemias of Infants and Children, Am. J. Dis. Child. **27**: 433 (May) 1924.

3. Williamson, C. S., and Ets, N. H.: The Value of Iron in Anemia, Arch. Int. Med. **36**: 333 (Sept.) 1925.

4. Other similar instances are to be found in the literature: Views Regarding Iron in Therapy, editorial, J. A. M. A. **78**: 512 (Feb. 18) 1922. Lucas and Fleischner, in Abt's Pediatrics **4**: 485 ff. Finally, Whipple, whose laboratory experiments seem to have had greatest influence in modifying clinical views concerning the value of iron therapy, apparently has reversed his opinions of a few years ago: Whipple, G. H.: Iron in Anemia, J. A. M. A. **86**: 367 (Jan. 30) 1926.

5. Lichtenstein, A.: Abstr. Jahrb. f. Kindh. **88**: 387, 1918.
6. Schulthess, H.: Schweiz. med. Wchnschr. **2**: 998, 1921.
7. Finkelstein, H.: Saueglingskrankheiten, ed. 3, 1924, p. 767.
8. Tixier, L.: Médecine **2**: 483 (March) 1921.
9. Schwarz, H., and Rosenthal, N.: Arch. Pediat. **37**: 1 (Jan.) 1920

An excellent opportunity presented itself here to test the efficacy of iron therapy by prescribing the drug for one twin while using the other as a control. Hazel was given 10 grains (0.65 Gm.) of saccharated ferrous carbonate three times daily with 1 drachm (4 cc.) of cod liver oil. Except for this medication, the diets and care of the two children were identical and they were placed in adjoining beds. The hemoglobin of the child receiving iron began to rise as follows (chart 1):

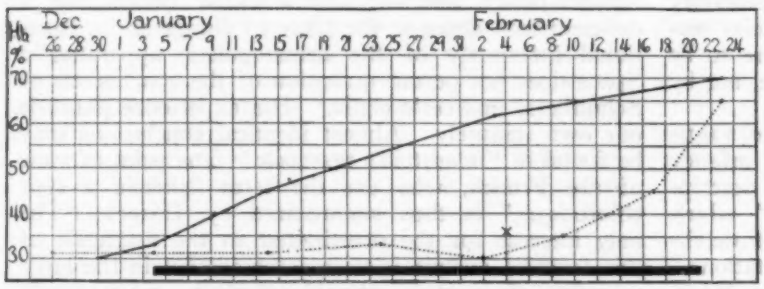

Chart 1 (cases 1 and 2).—Hemoglobin percentage: solid line, Hazel; dotted line, Pearl; X, transfusion; heavy horizontal line, saccharated ferrous carbonate, 0.65 Gm., three times a day.

January 4, hemoglobin, 32 per cent; iron begun.
January 14, hemoglobin, 45 per cent.
January 20, hemoglobin, 50 per cent; red blood cells, 4,000,000.
February 3, hemoglobin, 62 per cent; red blood cells, 4,300,000.
February 23, hemoglobin, 70 per cent.

January 25, there was a striking improvement in the condition of Hazel. There had been a recession of the size of the spleen and liver. The child was gaining in weight. The hemoglobin was up to 50 per cent, with a corresponding increase in the number of red blood cells.

The twin, Pearl, who received no medication, failed to show any change in hemoglobin. January 24, she still had 32 per cent and a red blood cell count of 2,800,000. She developed fever, which gradually assumed a septic type; she became more and more prostrated and showed signs of a very severe pharyngitis. As she seemed about to succumb to this virulent infection, she was given a transfusion of 275 cc. of her father's citrated blood. This checked the illness, the fever subsided, and the hemoglobin began to rise, as follows:

February 2, hemoglobin, 30 per cent.
February 4, transfusion.
February 9, hemoglobin, 35 per cent.
February 17, hemoglobin, 45 per cent.
February 23, hemoglobin, 65 per cent.

It is rare in the clinic to be able to make observations as carefully controlled as in most animal experimentation. Twins, particularly single ovum twins as these probably were, resemble each other minutely in almost all their reactions;[10] indeed, they are much more nearly alike than two animals of the same litter. Furthermore, in the hospital they were subject to the same hygienic conditions and received the same diet. The sole difference was that Hazel received the cod liver oil and iron. Yet the difference in the two children was remarkable: the difference between an increase of 30 points in one case, as opposed to progressive weakness with resulting infection of such severity that transfusion became imperative. Cod liver oil could not have been responsible for this transformation, even assuming that rickets was of major importance in the development of the anemia; for the improvement in the anemia occurred in days whereas the cure of rickets is a matter of weeks and months.

These cases serve to emphasize another phase of the therapy of anemia. Why are there not more dire results when iron is not administered? In other words, what happens to anemic children who do not receive iron? In the group of children with mild anemia there is a strong tendency to spontaneous improvement and sometimes to cure with advancing age. Thus, many of these babies develop into children somewhat pale and generally inferior, and the infantile anemia responsible for their condition may be forgotten entirely. Another group of infants succumb to intercurrent infection, and the anemia plays an important but often unsuspected part in the fatal outcome. One of us[11] has called attention to the relation between pneumonia and anemia and the beneficial effects of transfusion. A third group of infants develop anemia of such severity that transfusion becomes an emergency measure. To this group, Pearl D. belongs. When seen at this late stage of anemia, one is apt to forget that iron therapy earlier in the disease might have prevented a catastrophe, or at least rendered drastic measures unnecessary.

CASE 3.—J. M., a boy, was seen by one of us (M. H. B.) when 9 months old. The child was delivered by cesarean section about two weeks before term. The birth weight was 7 pounds 2 ounces (3.2 Kg.). For the past two months the child had looked pale. He was breast fed for only ten days, and thereafter was placed on the usual milk, water and sugar mixture with additional cereal at 6 months. On examination the baby was pale, and weighed 18 pounds 2 ounces (8.2 Kg.). He had six teeth, and there were no signs of rickets. The spleen and liver were not enlarged. Hemoglobin was 42 per cent. Soup was added to the diet and saccharated ferrous carbonate, 10 grains (0.65 Gm.) three times a day, was ordered. Twenty days later the child's weight was 19 pounds 10 ounces (8.9 Kg.) and the hemoglobin was 63 per cent.

CASE 4.—E. O., a boy, was admitted to Mount Sinai Hospital at the age of 2 years and 3 months. The child was an eight months' premature baby weighing 4 pounds (1.8 Kg.) at birth. At 1 month of age he had a convulsion. Although the weight had not been followed accurately, the child evidently had been below normal. Dentition and walking had been slow; and mentally he had been retarded slightly. The child was breast fed for six months. From then to the eighteenth month he received milk. At that time an attack of diarrhea, vomiting and fever of two weeks' duration was followed by severe weakness. Since then the diet consisted of a quart (liter) of milk, orange juice and crackers. Eggs, broth and cereal were offered to the child, but he refused to take any-

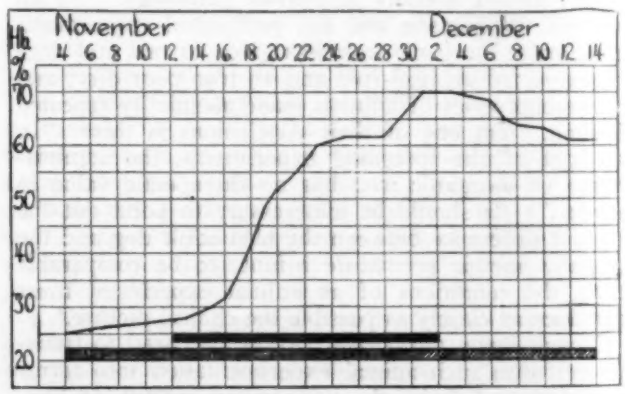

Chart 2 (case 4).—Hemoglobin percentage: heavy horizontal line, saccharated ferrous carbonate, 1.3 Gm., three times a day; stippled line, diet of milk, cereal and toast only; shaded line, full diet, including vegetable and soups; hemoglobin taken at 2:30 p. m. by same person using Sahli-Kuttner apparatus corrected.

10. Abt, I. A.: J. Iowa State M. Soc. **14**: 395 (Sept.) 1924.

11. Bass, M. H.: Association of Anemia and Pneumonia in Infants, Am. J. Dis. Child. **29**: 318 (Sept.) 1925.

thing but milk and crackers. He had been growing progressively paler. He had pertussis, mumps and chickenpox before the eighteenth month, but had had no infections since then. The child was well developed but flabby, with evident anemia and moderate rickets. For several days the diet consisted only of milk, cereal and orange juice. Thereafter saccharated ferrous carbonate, 10 grains (0.65 Gm.) three times a day, was prescribed. The resulting increase in hemoglobin is given in chart 2.

CASE 5.—R. B., a boy, was admitted to Mount Sinai Hospital at the age of 8 months. The infant was a seven months premature baby weighing 5 pounds 8 ounces (2.5 Kg.) at birth. During the first two weeks of life the child appeared blue. The father had tuberculosis, supposedly in an inactive form. The child was breast fed for six weeks. After that he received various milk, water and sugar formulas. For three weeks the child had been given farina. He had never had vegetable soup, orange juice or cod liver oil. On examination he was pale and weighed 12 pounds (5.4 Kg.). There were no signs of rickets. The spleen could not be felt, and the liver reached the costal margin. The hemoglobin was 40 per cent. The course is given in chart 3. During the period (seventeen days) when a full diet plus cod liver oil and ultraviolet light were given, the hemoglobin remained at 40 per cent. When iron was added and cod liver oil and ultraviolet light were discontinued, the hemoglobin rose to 64 per cent in twenty-five days.

This case illustrates the rapidity of the response to iron as compared with vegetable feeding only. . It is not to be denied that an infant with moderately severe anemia, particularly if vegetables, broths, etc., are added at 8 months of age, will improve under dietetic treatment only. But the response to this therapy is slow, a matter of months and not weeks, whereas iron hastens and completes the process.

The relation of anemia, iron therapy and infection may be illustrated by reference to two cases which will not be reported in detail. L. B. and R. R., suffering primarily from nutritional anemia, passed through a series of infections while under observation in the hospital. Iron given in large doses during the infection failed to produce an increase in hemoglobin. After the subsidence of the infection, the hemoglobin rose gradually and very slowly. Iron administered during an infection fails to improve the anemia.

The use of iron in two groups of cases, namely, children recovering from infections and children with a very mild or questionable anemia, has caused iron therapy to fall into disrepute and has led to much loose prescribing and loose thinking concerning the problem of secondary anemia. In the first group the children receive a "little tonic" to build them up following an infection, and the anemia improves along with the general improvement in health and the freedom from infection, regardless of iron therapy. In the second group, the children with very slight anemia, giving a tonic satisfies the parental wish for "something to be done."

THE DOSAGE OF IRON

In our work we have used only saccharated ferrous carbonate in amounts varying from 30 to 60 grains (2 to 4 Gm.) a day. In other words, we adhere to those who believe in large doses of iron. We do not imply that this is the best or the only method of administering iron, but we do emphasize the fallacy of condemning iron therapy after using only small doses. In other words, the results of different authors with iron therapy may be comparable only if the dosage is similar.

Most clinical studies of secondary anemia have emphasized only the iron content of hemoglobin. There is another aspect of the problem which refers not to the iron content of hemoglobin so much as to its protein portion. Hemoglobin is composed of a protein, globin, and an iron-containing part, hematin. The hematin part of the hemoglobin molecule contains a particular molecular grouping, the pyrrol group, which cannot be synthesized by animals. According to Abderhalden, milk in particular contains little or none at all of these pyrrol structures.[12] "It is not improbable, therefore, that inorganic salts added to an exclusive milk diet are not utilized, simply for the reason that other component parts of the hemoglobin molecule, as important as iron itself, are either lacking altogether in the milk diet, or are present therein in insufficient amount to subserve the needs of the blood-forming organs." [13]

Recently Hart, Steenbock and Evehjem [14] have presented further data "which support the original hypothesis of Abderhalden that hemoglobin can be built from inorganic iron in the diet only when that diet is accompanied by certain organic structures, and further that milk is not only low in iron but that it is also low in the organic complexes that make possible the building up of hemoglobin." Briefly, the results of their experiments may be thus summarized:

1. Anemia produced in rabbits by an exclusive milk diet was not cured by the addition of inorganic iron to the diet.

2. When cabbage and iron were added to the milk diet, the anemia was cured promptly.

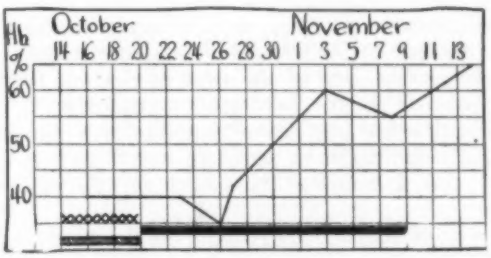

Chart 3 (case 5).—Hemoglobin percentage: mixed diet, i. e., farina, vegetable, milk formula; line of x's, quartz lamp; shaded line, cod liver oil; solid line, saccharated ferrous carbonate, 0.65 Gm., three times a day.

3. As cabbage also contains iron, it became necessary to render the cabbage iron free, and an alcoholic iron-free extract of cabbage was prepared. This, with inorganic iron added to the milk diet, cured the anemia. Chlorophyl, the iron-free coloring matter of plants, and also an iron-free extract of corn meal plus inorganic iron, produced the same result. "Evidently these two different types of plant material contain certain substances soluble in alcohol and free from iron which are intimately concerned with hemoglobin formation."

In the light of these experiments, it is interesting to note that at the time when infantile anemia becomes manifest (about the sixth month) it is customary for pediatricians to add cereal to the diet and before the ninth month to include vegetable extract or purée. When inorganic iron is given to such children, the protein building stones necessary for the synthesis of hemoglobin are probably already a part of the diet, and the ingredients of the hemoglobin molecule therefore are complete. Thus, empirically the requirements worked out in the laboratory have been fulfilled.

12. Abderhalden, Emil: Lehrbuch der physiologischen Chemie, ed. 5, 1923, part 2, pp. 29 ff.
13. Robertson, T. B.: Principles of Biochemistry, ed. 2, 1924, p. 49.
14. Hart, E. B.; Steenbock, Harry; and Evehjem, C. A.: J. Biol. Chem. **65**: 67 (Aug.) 1925.

SUMMARY AND CONCLUSIONS

1. The use of inorganic iron has been approached from the standpoint of animal experiments not comparable to clinical anemias, at least to those of infancy.

2. The subdivision of secondary anemias of infancy is of service in emphasizing differences in etiology, pathogenesis and treatment.

3. The iron depot theory of Bunge applies to the nutritional and constitutional anemias of infancy.

4. Anemias due to infection do not respond to iron.

5. The affirmation of the value of inorganic iron in the anemias mentioned does not imply the uselessness of dietary or other forms of organic iron. On the contrary, in the prevention of anemia attendant on a too prolonged milk diet, the use of green vegetables, beef extracts and liver still has, and has had, a well established place in pediatric practice for more than a generation.[15]

57 West Ninety-First Street.

TOXIN-ANTITOXIN

HYPERSENSITIVITY TO ITS PROTEIN CONTENT *

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Toxin-antitoxin mixture, as now made in accordance with the technic of Park [1] and his assistants, has proved itself remarkably free of the protein element from the clinical as well as the laboratory standpoint. A five year clinical study has proved satisfactorily the inability of toxin-antitoxin to sensitize individuals to horse protein; this conclusion is based on the following premises:

A group of individuals coming to the asthma clinic of the Germantown Hospital was tested, as a routine, for susceptibility to horse protein. At the same time, a test was made on this group with toxin-antitoxin without dilution, the scratch method as well as the intracutaneous test being employed. No individuals, even those susceptible to the usual test for horse protein, gave any reaction whatever to toxin-antitoxin.

One hundred were so tested, and of these 2 per cent reacted to the horse protein (H. B. W.). None of these showed any reaction to the toxin-antitoxin when given a 0.2 cc. intradermal dose.

The Park test showed a pseudoreaction in 8 per cent of 10,000 children, not necessarily asthmatics or previously known to be susceptible to horse protein (E. L. B.). The pseudo Schick reactions in 40,000 children were found in 10 per cent of the cases (E. L. B.). These pseudoreactions are of no significance from the standpoint of constitutional reaction to toxin-antitoxin.

Fifteen children suffering from asthma due to horse protein sensitivity were given the full course of treatment with toxin-antitoxin, and their reaction differed in no wise from the reaction of those who were absolutely well. No effort was made to desensitize them before the treatment was carried out.

In 100,000 children,[2] twelve contracted diphtheria either during or shortly after the toxin-antitoxin treatment and were given antitoxin, with no evidence of hypersensitivity. The same is true of 100 contacts to diphtheria who had not had time to develop active immunity. However, not all of these had been tested prior to toxin-antitoxin administration. Twelve were given tetanus antitoxin during or subsequent to toxin-antitoxin injections, one as long as one year after, and only one of the twelve had any reaction. This boy had given a reaction to the horse serum test before toxin-antitoxin administration, but had had no asthma. He was quite ill, with a fever of 103, urticaria and joint pains for two days. We have seen the same reaction many times following tetanus and diphtheria antitoxin administration not preceded by toxin-antitoxin or other serum treatment.

Tetanus antitoxin given during or subsequent to toxin-antitoxin:
After second injection of toxin-antitoxin:
Two cases—no reactions.
After third injection of toxin-antitoxin:
Within one month—three cases—no reactions.
One protein tested prior to toxin-antitoxin administration.
Within six months—five cases.
Two protein tested prior to toxin-antitoxin administration.
One of those susceptible gave reaction already quoted.
Within one year—two cases.
One protein tested prior to toxin-antitoxin administration.
One susceptible to protein prior to toxin-antitoxin administration.
No reactions.
Diphtheria antitoxin given during or subsequent to toxin-antitoxin administration:
No marked or alarming reactions. Only five of this group tested prior to toxin-antitoxin administration; none found susceptible to horse protein.

One hundred and fifty thousand children, most of them fully immunized with toxin-antitoxin, have been under the observation of one of us (E. L. B.) for a period of from one to five years through the Department of Public Health of Philadelphia, and none have given any marked reaction to toxin-antitoxin administration or have shown any tendency to protein sensitivity by test six months after the injections.

We are therefore convinced that in the use of the toxin-antitoxin mixture properly made and with the protein removed, according to the methods of Park [1] and of Banzhof, no hypersensitivity to horse protein is developed. Further, we are convinced that it is safe and indeed wise to use toxin-antitoxin in asthmatic patients known to be susceptible to diphtheria. Therefore, to assume that hypersensitivity is developed by toxin-antitoxin, one must first prove that hypersensitivity was not present before the administration of the toxin-antitoxin, since those hypersensitive to horse protein do not react to the infinitesimal amounts of protein in the toxin-antitoxin mixture advocated.

15. Bunge, G.: Physiological and Pathological Chemistry, p. 383. Hoobler, B. R.: J. Michigan M. Soc. **23**: 150 (April) 1924.

* From the Department of Public Health.

1. Park, W. H.: Publications of the New York Department of Public Health, Division of Laboratories, 1924-1925.

2. Bauer, E. L.: Manual of Diphtheria Prevention, Monthly Bulletin, Department of Public Health, Philadelphia, **9**, no. 7, July, 1924.

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IS BACTERIUM ABORTUS PATHOGENIC FOR HUMAN BEINGS?*

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The remarkable discovery made by Evans,[1] that the causative organism of undulant fever in man and that of Bang's abortion disease in cattle were similar if not identical, has brought forth considerable confirmatory evidence in this country and in Europe. These findings have served as a stimulus to observe more closely the possibility of man acquiring a fever from handling or ingesting material containing *Bacterium abortus*. Already many cases of illness in man in which the main symptom was characterized by recurrent fever have been cleared by the proper application of the knowledge that Evans has given us.

Cooledge [2] was probably the first to conduct experiments to determine the possibility of *Bacterium abortus* infecting man. At the time, he had no knowledge as to the relation of *Micrococcus melitensis* to *Bacterium abortus*, or what the nature of the disease would be if infection took place. The serologic tests were made use of in this work as a criterion of infection. The results were negative, with the exception of an occasional partial reaction which was possibly due to the absorption of agglutinins present in the milk ingested. The negative results obtained in this experiment were probably due to the small number of organisms in the naturally infected milk and to the lack of virulence of the culture used.

Fleishner, Vecki, Shaw and Meyer [3] have very clearly demonstrated that, in infecting monkeys with *Bacterium abortus*, the number of organisms and their virulence are very important factors to consider.

The case reports of undulant fever made by Keefer,[4] Evans,[5] Bevan,[6] Duncan [7] and others have again raised the question as to the possibility of contracting the disease from cattle infected with *Bacterium abortus*. While the evidence pointing to cow's milk as the source of the infection in these cases is largely circumstantial, it remained for Carpenter [8] to associate closely two cases of undulant fever in man with the ingestion of raw cow's milk containing *Bacterium abortus*.

REPORT OF CASE

During the last year, evidence came to my attention that a former graduate student was possibly affected with undulant fever. He became ill during the winter of 1924, while working in the laboratory with several newly isolated cultures of *Bacterium abortus*. He had never worked with cultures of *M. melitensis*. He suffered from periodic attacks of headache, muscular pains, slight fever, malaise and gastric disturbances during the winter and spring, and became greatly emaciated toward the beginning of the summer. He left the laboratory in June and became associated with the Detroit Medical College. The condition persisted throughout 1924 and until July, 1925. The paroxysms, however, were less severe. He was examined by several competent physicians during this time, but they were unable to arrive at the cause of his condition. In the summer of 1925, he happened to be reading some case reports on undulant fever. The symptoms described compared so closely with his own that he made an agglutination test on his blood, using *Bacterium abortus* as antigen, and found that it reacted in a dilution of 1:400. No blood or urine cultures were made at the time. Cultures of the blood and urine were taken in October, 1925, with negative results. At this time the agglutination test was positive in a dilution of 1:50 to both *Bacterium abortus* and *M. melitensis*. His condition was much improved in August, 1925, and continues so at this time.

Oct. 24, 1925, another case came to our attention. This young man was also a graduate student in our laboratory, and had been working for more than a year with cultures of organisms isolated from the pregnant bovine uterus. Among these were three or four cultures of *Bacterium abortus*. He was away from the laboratory during three months of the summer of 1925, returning in September. October 24, he became suddenly ill, with muscular pains, pains in the back of the neck and the sacro-iliac region, malaise, headache, fever, chills, high pulse, a slight cough and hoarseness. During the next four days, the temperature was normal in the morning and gradually rose during the afternoon. On the 29th, he felt normal; on the 31st, a second paroxysm occurred, the temperature at this time rising to 104 F. His condition was again normal, November 5, except for marked prostration. The degree of prostration is gradually increasing, and the process of alternating recrudescence and defervescence is continuing. From the beginning he has had a painful spleen, gastric disturbances, weak eyesight, and alternating constipation and diarrhea.

A physical examination by Dr. O. H. Bruegel of East Lansing, Jan. 5, 1926, seven days after a paroxysm, showed moist and clear skin except for a few small, reddish spots scattered over the chest and abdomen, some of which were slightly scaly, unlike rose spots. The tongue was heavily coated and whitish. The tonsils had been removed. The glands of the neck were not palpable. The thyroid was normal. There was good expansion in both lungs, which were normal, except for an occasional râle. The apex beat of the heart could be neither seen nor felt. The heart was possibly slightly enlarged to the right; the sounds were not clear and seemed slightly muffled. There was a second pulmonic impulse but it was not doubled. The pulse was 80, with low tension. The systolic blood pressure was 104; diastolic, 70. The abdomen was not distended; there was some tenderness below the costal margin on both sides and in the regions of the gallbladder and spleen. The liver could not be felt. The spleen was easily palpable, extending one finger-breadth below the costal margin on inspiration. The right lower quadrant was normal.

The first blood and urine culture made, Nov. 11, 1925, was negative. The blood serum at this time agglutinated both *Bacterium abortus* and *M. melitensis* in a dilution of 1:1,000. A blood culture, November 23, showed an organism indistinguishable from *Bacterium abortus*. The urine culture was negative. A blood culture, December 8, was also positive. The agglutination titer of the blood serum at this time had risen to 1:2,000. The same titer persists at the present writing.

The source from which the infection was acquired in this case has been a matter of no little speculation. It is obvious that three sources may be considered; namely, the handling of laboratory cultures, and the ingestion of raw cow's milk or goat's milk in which the infective organism was present.

Since this man had worked with cultures of *Bacterium abortus* in the laboratory, the probability of accidental infection cannot be altogether excluded.

The question of infection from goat's milk may be excluded, as there is none sold in this community.

* From the Bacteriological Section, Michigan Agricultural Experiment Station, Michigan State College.

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4. Keefer, C. S.: Report of a Case of Malta Fever Originating in Baltimore, Md., Bull. Johns Hopkins Hosp. **35**: 6 (Jan.) 1924.
5. Evans, Alice C.: Malta Fever: Cattle Suggested as a Possible Source of Infection, Following a Serological Study of Human Serums, Pub. Health Rep. **39**: 501 (March 14) 1924.
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In considering the question of cow's milk, it was found that this man had been drinking raw milk obtained from a small dairy. A sample of milk was obtained from a bottle on the milk wagon of the owner and examined culturally for *Bacterium abortus* by a previously described method.[9] A large number of colonies of *Bacterium abortus* were obtained on each of the several plates made. The presence of *Bacterium abortus* in the milk indicates that the infection may have been acquired from this source, as well as from handling cultures of the organism in the laboratory.

When the symptoms of the case above described became known to the men working in our laboratory, another graduate student, who had been working with both *Bacterium abortus* and *M. melitensis* for more than one year, remarked that he had had similar symptoms, only somewhat milder, two weeks previously. At this time, he complained of an occasional pain in the region of his spleen and his pulse was 90. A blood culture and an agglutination test were made, Nov. 23, 1925. An organism was obtained from the culture which resembled *Bacterium abortus* in every detail. The serum agglutinated both *Bacterium abortus* and *M. melitensis* in a dilution of 1:200. December 8, the titer of the serum had risen to 1:400. His condition still appears good, except the painful spleen and a feeling of slight prostration. According to previous clinical studies, the case would be classified as the ambulatory type of disease.

This man was well aware of the virulence of the cultures of *M. melitensis* with which he was working, and consequently had used considerable care in avoiding infection.

An inquiry was made as to the source of the milk he had been drinking, and it was found that it came from the same source as that consumed by the patient with the previously described, typical form of the disease.

Until the disease appears in persons who have not been working with the organism, the naming of the origin of the infection in these cases must be held in reserve.

The point in question, however, is clear; that is, *Bacterium abortus* of bovine origin was undoubtedly the etiologic factor concerned in the manifestation of symptoms similar to those of undulant fever in two of these cases, and *M. melitensis* may have been responsible for the manifestation of a mild form of the disease in the third case.

Yet, an agglutinin absorption test performed on the blood serums in the third case as well as the second case placed the causative organism in the group of *Bacterium abortus* mainly of bovine origin.

The technic described by Ficai and Alessandrini[10] for differentiating between *Bacterium abortus* and *M. melitensis* infection has been employed on the serum in these two cases with varying results. From the results obtained in this test, the typical case is due to *Bacterium abortus* and the atypical to *M. melitensis*. It is not certain that this test can be relied on, as the heating of many bovine serums at 56 C. for thirty minutes will destroy agglutination for *Bacterium abortus*.

There is another factor which may serve to indicate which organism is responsible for the disease, and that is the atmospheric requirements for the primary growth of the organism. It is well known that *M. melitensis* will grow aerobically on primary cultivation and that *Bacterium abortus* requires carbon dioxide for its initial growth. The two organisms isolated in these cases would not grow aerobically in cultures made from the blood, but grew readily when placed in an atmosphere containing 10 per cent of carbon dioxide.

In a further consideration of the source of infection the thought has occurred that, if infective raw milk was the source of infection, why are there not more cases of this disease observed in the United States? Two probable answers are offered. First, it is rare to find *Bacterium abortus* present in the milk from the udders of all cows in a herd. When it is found, the number is rarely larger than 500 per cubic centimeter of milk. At the drying up period, it is found in millions per cubic centimeter of milk from the infected udder. Should such milk find its way into the raw milk supply for human consumption, it is likely that *Bacterium abortus* will be found present in large numbers. In other words, there would be a sufficient quantity of organisms present to make the milk a source of infection and dangerous for human consumption. The second factor to be considered is that there may have been and may now be many cases of this disease which have not been diagnosed or are not severe enough to have come to the attention of practicing physicians.

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ANILINE SHOE DYE POISONING

REPORT OF THREE CASES

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Muehlberger,[1] in 1925, reported a series of ten cases of shoe dye poisoning, bringing the present total of all cases reported in medical literature up to fifty-eight. He entered exhaustively into an analysis of this subject, quoting all the published data. The additional and particular merit of his analysis, however, lies in the fact that, whereas the cases previously reported in the United States were due to nitrobenzene poisoning, of the ten recorded by him six were due to aniline, these being the first to be reported in this country. To the six I now add three that recently came under my observation.

REPORT OF CASES

CASE 1.—A girl, aged 14, who left her home at noon in good health, two hours later suddenly developed severe frontal headache and became cyanotic. This was followed by slight nausea and drowsiness. When seen at the hospital in the evening, she was still deeply cyanotic and was suffering from headache and slight nausea. She was mentally alert; there was no shortness of breath or heart palpitation; there was no fever, and the pulse was normal in rate and rhythm. The heart tones were pure at all valve areas; no edema of the extremities could be seen. Respiration was normal in character, and the lung and blood examinations proved negative. The urine contained a trace of albumin. On the following morning, the patient had entirely recovered. It was ascertained that she had put on freshly dyed black shoes at noon, two hours before the symptoms developed. Twenty-four hours later, the shoes still had an unpleasant aniline odor.

The dye in this case was made locally; the label states that it is odorless (which it is not), and cautions against the use of the dyed shoes in less than twenty-four hours after treatment. This warning is at the bottom of the label and is too small to strike the eye of the user.

1. Muehlberger, C. W.: Shoe Dye Poisoning, J. A. M. A. 84: 1987 (June 27) 1925.

CASES 2 and 3.—September 13, several weeks after the first patient was seen, two brothers, aged 11 and 13, were brought to the hospital. Their symptoms and the clinical course of their disease were so nearly identical that a single report will suffice. Canvas slippers were dyed while on the feet, the dye being a substance that had been in the cellar about ten years. Soon after, the boys complained of a "pins and needles" sensation and numbness of the feet; two hours later they felt dizzy and weak, had a ringing in the ears, and fell in a stupor. They remained in a confused state about one hour. At this period they were admitted to the hospital: vomiting had set in; they were confused, unresponsive and dull; the skin and buccal membranes were deeply cyanosed; respirations were rapid; the lungs were clear; the pupils were widely dilated and the heart rate 120 and 125, respectively; the action was rhythmic, the tones clear and the pulse of good volume. The temperature rose to 99.4 and 99.8, respectively. The feet were discolored with dye. After several hours, the symptoms began to subside, and on the following morning all the evidences of poisoning had disappeared. The urinalysis was negative in both patients; blood examination made on the day following admission showed: a red count of 4,470,000 and 4,590,000; hemoglobin, 83 and 81 per cent, and a leukocyte count of 11,200 and 17,870, respectively, with a normal differential.

The dye used in these cases was in a container without a label. It had an aniline odor, and was analyzed for me by a local chemist, Dr. J. Gubelmann, who reported that it contained 36.58 per cent of an amino-compound, which had definitely been identified as aniline.

As outlined in Muehlberger's analysis, shoe dye poisoning may result from brown or black dye, and may be due either to nitrobenzene or to aniline being used as a solvent. European accounts indicate that aniline is as freely used as a solvent as is nitrobenzene, and the reported cases of poisoning are about equally divided between the two toxic products.

It may be interesting to note that in connection with certain commercialized products other than those mentioned, poisoning has not been unknown. Thus, I am informed that cases of aniline poisoning (with cyanosis as the principal symptom) are not infrequently encountered in a large local chemical plant where aniline dyes are manufactured.

Another product, benzene,[2] has produced markedly toxic symptoms, but of a different character. Thus, Selling [3] reports a number of cases of benzene poisoning in persons employed in the manufacture of tin cans. The solder used was made of rubber dissolved in commercial benzene. A number of similar cases was reported by Santesson [4] of Stockholm, in 1897, as occurring in bicycle tire workers, benzene having been used as a solvent for the rubber.

The symptoms in the benzene cases reported by Selling and Santesson were different in type from those due to aniline and nitrobenzene; whereas the latter were acute, rarely fatal (two out of fifty-seven patients died) and were characterized by cyanosis, the former were in many instances fatal, but essentially chronic, becoming acute only in the end, and were characterized by purpura, anemia and leukopenia. Experiments definitely proved that nitrobenzene was not the toxic agent in these cases, but that benzene was the actual poisonous distillate.

Since seeing the three patients reported above, I have interviewed a number of shoe repairers. All showed me the dye they use, most of them employing the brand used in case 1. A few knew the danger and were emphatic in stating that they have lost customers because of their refusal to deliver shoes in less than two or three days after dyeing; others knew nothing of the hazard, and were not sufficiently impressed with the unstarred warning on the original container to employ or to give the necessary caution. Thus, it is evident that it is not generally known that the danger of absorption is greatly lessened the longer the interval between dyeing and wearing; that this interval should be several days, although one may suffice, and that particularly when shoes are dyed while being worn is there great danger of speedy absorption.

The local shoe dye manufacturer, I have reason to believe, has commercialized his product on a very large scale, thus greatly multiplying the potentiality for disaster from this source.

The total number, now sixty-one, of reported poisonings does not, of course, represent all the actual cases. Several reports of aniline cases have come to me since I called attention to these three. In many, doubtless, the symptoms are of lesser import—perhaps only nausea, headache and dizziness, and subside as the toxic agent is dissipated from the shoes by evaporation; but as long as these dyes are being manufactured, the hazard will continue. The remedy may be found in either prohibiting their use entirely, or, if this is not done, in the employment of a label carrying a danger sign that cannot be overlooked. If the manufacturer and dyer are held to strict accountability, shoe dye poisonings will—as they should—cease.

141 Wisconsin Street.

2. The term "benzol" is an unscientific synonym for benzene; this is a coal tar product and must be distinguished from benzine, a petroleum derivative.
3. Selling: Bull. Johns Hopkins Hosp., February, 1910.
4. Santesson: Arch. f. Hyg. 21: 336, 1897.

EFFECT OF MENTAL AND EMOTIONAL STATES ON THE LEUKOCYTE COUNT

I. PRELIMINARY REPORT *

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AND
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It is known that mental and emotional states may produce changes in pulse rate, blood pressure, respiratory rate and pupillary reactions, but no attempt has ever been made to study and record leukocytic changes, as far as we have been able to determine from a careful survey of the literature. It has been noted by some that increased leukocyte counts may be found following epileptic attacks and hysterical seizures, but we are not aware that accurate studies have been made in these conditions.

It has been our purpose in these experiments to determine the effects of mental and emotional states on the number and types of leukocytes in the peripheral blood of animals and man. With this end in view, we used dogs in our first series of experiments. Our methods of inducing alterations in the emotional states of the animals consisted of such procedures as placing a cat or a rat in a cage within plain view of the dog under experiment and securely fastened, and then applying various external stimuli.

Realizing the impossibility of determining accurately the exact mental state of the animals, we used such objective methods as obtaining the pulse rate and

* From the Department of Pathology and Bacteriology, University of Illinois College of Medicine.

respiratory rate and the bodily response of the animal. The pulse rate and leukocyte counts were taken several times at intervals of a few minutes while the dog was apparently calm, and control counts were made, before the apparent induced change in the animal and again every few minutes thereafter.

In ten dogs, an increase of from 30 to 150 per cent in the number of leukocytes was observed under the conditions detailed above.

Our second series consisted of experiments on thirteen patients at the Cook County Hospital presenting noninfected surgical cases, including uncomplicated hernias, varicoceles, hydroceles and hemorrhoids. These experiments were based on our belief that the anticipation of an operation in the immediate future would be sufficient to induce some alteration in the mental and emotional states of most patients. Control counts were taken at frequent intervals during the second or third days preceding the operation. The final count was taken immediately before the operation, with the patient on the operating table. In these cases we were able to ascertain the subjective states of the patients. In seven of the thirteen cases, there was definite evidence of fear and apprehension, while the remaining six patients appeared to be indifferent. The former showed an increase of from 12 to 100 per cent in the number of leukocytes, while in the latter there was little or no change.

The differential counts both in dogs and in man revealed a relative increase in the polymorphonuclear forms.

The exact mechanism of this peripheral leukocytosis is not quite clear, but the work of E. F. Müller [1] and his associates would tend to show that there is in some way a complex reaction of the involuntary nervous system.

The results obtained in our experiments might also be explained on the basis of the preponderance of leukocytes which adhere to the walls of the blood vessels in the splanchnic region under normal conditions. Walter B. Cannon [2] has shown that, during mental and emotional states, there is a constriction of the blood vessels, especially in the splanchnic region, which would have a tendency to liberate the leukocytes from the endothelium of the blood vessels into the peripheral general circulation. This might account for a greater number of leukocytes in the peripheral vessels in which our counts were made. We have not yet attempted to demonstrate the mechanism of this interesting reaction. Its practical import lies in the fact that this phenomenon may have to be considered as a not infrequent cause of leukocytosis, especially in operative cases, and may be confused with infective or other types of leukocytic change.

1. Müller, E. F., and Myers, C. N.: The Effect on the Involuntary Nervous System of Arsenicals and the Salvarsan Group, Proc. Soc. Exper. Biol. & Med. **21**: 474-477, 1924. Müller, E. F.; Rosen, I., and Myers, C. N.: Relation of Silver Arsphenamine to the Involuntary Nervous System and to the So-Called Nitritoid Crisis, Arch. Dermat. & Syph. **10**: 607-616 (Nov.) 1924. Müller, E. F., and Myers, C. N.: Biochemical Studies on the Behavior of the Leukocytes After Intravenous Administration of Alkalinized Salvarsan, Proc. Soc. Exper. Biol. & Med. **22**: 95-98, 1924. Müller, E. F.: The Involuntary Nervous System: An Important Factor in the Body's Resistance, Arch. Int. Med. **35**: 796-806 (June) 1925.

2. Cannon, W. B.: Bodily Changes in Pain, Hunger, Fear and Rage, New York, D. Appleton & Co., 1915.

Use of Dyes in Therapeutics.—A conservative attitude of mind toward all matters dealing with life and death must lead us to insist on a study of a far larger number of tests than we now have at hand in the cases of all of these dyes used as germicides and antiseptics.—Stieglitz, Julius: Chemistry and Recent Progress in Medicine.

Clinical Notes, Suggestions, and New Instruments

SPUTUM EXAMINATION IN SO-CALLED CLOSED TUBERCULOSIS *

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Among others, we classify tuberculous patients as open and closed cases, based on the presence or absence of expectoration. Our recent observations made on two patients of the Mount Pleasant Sanatorium make it appear doubtful whether this classification based on apparent absence of expectoration is justified. In having done so, we failed to recognize that apparently closed cases may be in fact open cases and a source of infection.

We succeeded in demonstrating the presence of tubercle bacilli in the spray of two of our recently admitted patients in the absence of any expectoration. There was an extensive tuberculous involvement present in both of our cases, of acute and subacute character, respectively. The patients were advised to report immediately the slightest amount of expectoration and though our observation covered from four to eight weeks, we were unable to obtain a sputum specimen for examination.

We used the following simple technic: A cotton plug wrapped round a throat applicator was introduced as far as the epiglottis, and the patient was ordered to cough. From this almost invisible material, a smear was made, and in both of our cases the presence of tubercle bacilli could be demonstrated with the Ziehl-Neelsen method. In our second case, repeated use of this technic was necessary to establish a positive diagnosis.

Our observation may imply that no tuberculosis patient can be safely considered a closed case unless repeated examinations are made of spray materials as heretofore outlined, because it is assumed that there is no sputum obtained otherwise.

This technic may also be helpful—as it was in our cases—to aid in making a definite diagnosis in such doubtful cases, in which, in the absence of expectoration, our other diagnostic means fail to give definite evidence of pulmonary tuberculosis.

A brief summary is given of the two cases in which we demonstrated tubercle bacilli by the technic described.

REPORT OF CASES

CASE 1.—A girl, aged 17, had had a "chronic cold" for the last two months and a sudden rise of temperature to 104 F. one week prior to admission. The temperature was of the remittent type and continued for three weeks after admission. Her physicians diagnosed the case as grippal pneumonia. Examination revealed dulness over the entire front and in back to the sixth vertebral spine, with suppressed breathing. Subcrepitant and squeaky râles were heard throughout the entire left side. Pectoriloquy was not increased. The roentgen ray showed uniform haziness of the entire left lung. The white blood cells numbered 5,400, and the differential count showed a slight relative leukocytosis. Although the patient suffered at times with paroxysmal coughing spells and is still coughing throughout the day, she was never able to raise any sputum. Two weeks after admission, our cotton plug method was applied with the result that tubercle bacilli could be demonstrated.

CASE 2.—A girl, aged 14, the picture of health, well developed and well nourished, who did not cough or expectorate, and felt perfectly well, for six weeks prior to admission was under observation in a Baltimore hospital, with the diagnosis of unresolved pneumonia. The patient coughed occasionally prior to admission, but never expectorated. She had a slight elevation of temperature the first two days after admission; since then she has been afebrile. Examination revealed consolidation of the left upper lobe with tubular breathing, impaired percussions note and bronchovesicular breathing over other parts of the left lung. There was also some

* From the Mount Pleasant Sanatorium.

involvement of the right upper lobe. The roentgen ray showed soft, spotty infiltration of the left apex and upper lobe, with haziness of the remainder of the left lung, which left the impression that this haziness was due to unresolved pneumonia. The white blood cells numbered 13,600, with a normal differential count. When no sputum could be obtained otherwise, our cotton plug method was applied, and after the third trial we were able to find tubercle bacilli.

It may be noted that, when applying the plug, it is not necessary to aggravate the cough by irritation but by merely requesting the patient to cough while the plug is held.

POSTPARTUM ECLAMPSIA FOLLOWING THE DELIVERY OF SINGLE OVUM TRIPLETS*

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De Lee says that multiple pregnancy is distinctly abnormal and that it has been stated by an observer who studied more than 50,000,000 births that while twins occur only once in eighty-seven cases, triplets occur only once in 7,103 births. He further says that plural pregnancy always gives rise to disturbances on the part of both mother and child. On the part of the mother, nausea and vomiting, toxemia, varices and edema are more marked, while nephritis and eclampsia are much more common than in single pregnancy. He adds, "About 70 per cent of duplex pregnancies terminate before term, and practically all triplet and quadruplet gestations do so."

The fatality of the disturbances of pregnancy in plural gestations is increased, especially of the toxemia resulting in eclampsia.

Triplets and quadruplets offer a much higher percentage in mortality than twins, as regards the prognosis of the child.

REPORT OF CASE

History.—Mrs. J. A., aged 36, who was six months pregnant, consulted us, July 5, 1920, complaining of edema of the extremities, palpitation and dyspnea. Her maternal great-uncle was the father of male twins. Otherwise, there was no family history of multiple pregnancies. Her general health had always been good. She had had six pregnancies, five of which resulted in normal full term deliveries, and one, the fifth, miscarried at six weeks. Following the first gestation, in 1904, she noted an enlargement of the thyroid gland. Following each subsequent pregnancy, this gland had become larger. The first day of her last menstrual period was Dec. 14, 1919. In June, 1920, the patient noticed that her abdomen was unusually large; that she was very nervous; that she had palpitation and dyspnea on slight exertion, and that there was marked edema of legs, feet and hands. She had consulted no physician prior to this time.

Physical Examination.—There was marked anasarca; the pulse was 110; respiration, 26, and temperature, 98.6 F. The systolic blood pressure was 170; diastolic, 110; the height was 63 inches (160 cm.), and the weight, 112 pounds (51 Kg.). The thyroid gland, especially the left lobe, was markedly enlarged. There was no exophthalmos, no lagophthalmos or other thyropathic signs. The heart was enlarged 2 cm. to the right. A soft systolic murmur could be heard over the mitral area. The abdomen was markedly distended. A fetal head in the left occipito-anterior position could be outlined. The internal and external pelvic measurements were normal. There was a small rosette of external hemorrhoids. Pitting edema over the extremities and pelvic girdle could be demonstrated. The blood examination, except for a white blood cell count of 10,400, was quite normal. The urine showed a specific gravity of 1.034; albumin, 4 plus; indican, 2 plus; many fine and coarse granular casts; a few hyaline casts; many pus cells, and a few red cells.

Treatment and Course.—The patient was kept at absolute rest in bed, was digitalized and given magnesium sulphate, 1 ounce (30 Gm.), every morning. Her diet was soft, salt free and of low protein.

The patient remained at rest for fourteen days. The edema was lessened; the pulse became slower and of better volume; the blood pressure remained fairly constant at 160/100, and the dyspnea was less marked.

While it was considered advisable to keep the patient in bed for a much longer period, economic conditions had to be considered, so an attempt was made to permit her to get up and later to assume some household duties. As was to be expected, all former symptoms of decompensation reappeared, together with the alarming high blood pressure of 200, systolic; 130, diastolic. Again following a short stay in bed, there was some improvement in the patient's general condition. During the eighth month of her pregnancy, she began to complain of extreme nervousness and continuous cardiac palpitation. Her abdomen had become so swollen and heavy that very slight exertion caused marked dyspnea. A loud mitral systolic murmur could be heard.

This precarious condition continued until active labor ensued at about 11 p. m., October 3. At midnight, the cervix was fully dilated. The protruding membranes were ruptured artificially and were followed by a virtual deluge of amniotic fluid. The first baby, a girl weighing 4 pounds 7 ounces (2 Kg.) presented in the left occipito-anterior position, and was delivered at 12:13 a. m. The second baby, a girl weighing 5 pounds 9 ounces (2.5 Kg.), presented both feet and was delivered at 12:40 a. m. The third, also a girl, weighing 6 pounds (2.7 Kg.), presented in the left occipito-anterior position and was delivered at 12:55 a. m. The third stage of labor lasted ten minutes, the placenta being delivered spontaneously and intact. The secundinae showed three amniotic sacs and one large placenta, off of which came three umbilical cords.

After delivery 1 dram (4 Gm.) of ergot was given by mouth. The hemorrhage was slight, and the uterus contracted well.

Nine hours following delivery, the patient complained of severe frontal headaches. About one hour later, she had convulsions lasting fifteen minutes and followed by loss of consciousness. At this time the pulse rate was 96; respiration, 24; the systolic blood pressure, 180; diastolic, 110. The urine was loaded with hyaline and granular casts. The breath was uremic in odor. Following the removal of 100 cc. of blood, 300 cc. of 3 per cent glucose solution was given intravenously. Continuous hypodermoclysis with physiologic sodium chloride solution was begun, together with rectal injections of 10 per cent glucose, 150 cc., and 2 per cent sodium bicarbonate, 150 cc., every four hours.

The following morning the patient had regained consciousness, but complained of being unable to see. She had one convulsion, October 5, which lasted about five minutes, but was not followed by unconsciousness. Following this, she made rapid improvement. After two days she was able to see, but for about seven days there was considerable visionary disturbance, principally the complaint of large black spots before the eyes. The heart murmur persisted, although the edema, dyspnea and palpitation rapidly disappeared. On the fourteenth day postpartum, the patient was allowed out of bed. Convalescence was normal and two weeks after delivery her weight was 98 pounds (44.5 Kg.). Three months following delivery, her weight had increased to 127 pounds (57.6 Kg.). The pulse, blood pressure, temperature and respiration were practically normal and the urinalysis was negative.

The triplets progressed satisfactorily until November 27, when Virginia, the third born, developed a respiratory infection and died.

In November, 1921, the patient again became pregnant and in August, 1922, gave birth to a girl weighing 8 pounds (3.6 Kg.). Both the prenatal and the postnatal history of the latter pregnancy were uneventful.

Since that time we have seen the patient for various minor complaints. Her last visit to our office, Nov. 20, 1925, aside from a greatly enlarged thyroid and a blood pressure of 132/88, showed a woman enjoying unusually good health.

* Read before the Louisville Obstetrical Society, Nov. 27, 1925.

COMMENT

In common with most instances of multiple pregnancy, our patient suffered from edema and toxemia, together with the not infrequent complications, nephritis and eclampsia.

This report differs from similar reports, as follows:

1. Our patient was able to continue her pregnancy practically until full term. She recuperated rapidly from her postpartum condition and, eighteen months later, gave birth to a normal child. The prenatal and the postnatal history of the latter pregnancy were uneventful.

2. The pregnancy was apparently a una-ovular one, as evidenced by the single placenta.

3. The triplets were unusually large, but quite normal. Two of the children are now living. One died of pneumonia after having lived nearly two months.

Francis Building.

Special Articles

TYPHOID IN THE LARGE CITIES OF THE UNITED STATES IN 1925

FOURTEENTH ANNUAL REPORT

THE JOURNAL presents its fourteenth annual survey [1] of typhoid fever mortality in the seventy-seven cities of the United States that had more than 100,000 population in 1925.[2] As in the thirteenth report, the cities have been grouped according to the recognized geographic divisions of the U. S. Census Bureau. Since 1920, eight cities have been added to the list of cities with more than 100,000 population (El Paso, Lynn, Duluth, Utica, San Diego, Canton, Flint, Tulsa) and these appear for the first time in our tables.

TABLE 1.—*Death Rates of Cities in New England States from Typhoid per Hundred Thousand Population*

	1925	1924	1921-1925	1916-1920	1911-1915	1906-1910
Lowell	0.0	1.7	2.4	5.2	10.2	13.9
New Bedford	0.8	4.5	1.7	6.0	15.0	16.1
Lynn	1.0	2.7	1.6	3.9	7.2	14.1
Springfield	1.4	1.3	2.0	4.4	17.6	....
Fall River	1.5	0.0	2.3	8.5	13.4	13.5
Cambridge	1.7	4.5	4.3	2.5	4.0	9.8
New Haven	1.7	5.1	4.4	6.8	18.2	20.8
Hartford	1.9	0.0	2.5	6.0	15.0	19.0
Worcester	2.1	0.5	2.3	3.5	5.0	11.8
Bridgeport	2.8*	3.5	2.2	4.8	5.0	10.3
Providence	3.4	2.5	1.8	3.8	8.7	21.5
Boston	3.5	2.1	2.2	2.5	9.0	16.0

* Rate calculated on figures for population in 1922.

The cities of the New England group (table 1) again make a very favorable showing. All but four of the New England cities achieve a place on the Honor Roll (rates less than 2.0 per hundred thousand), and one city (Lowell, Mass.) has the distinction of remaining free from any typhoid death. The full five-year comparison (1921-1925) which this year becomes available renders possible a more satisfactory appraisal of the actual typhoid situation in communities like these New England cities, where the yearly typhoid deaths are now so few. In such a comparison it appears that in every city in this group but one the average annual rate was lower for 1921-1925 than for any preceding five-year period. In 1916-1920, seven of the New England cities had rates above 4.0; in 1921-1925, only two cities were above this figure. The five-year averages show particular improvement in New Bedford and Fall River. New Bedford carries off the palm for the lowest quinquennial average ever reached in this group, with Providence a close second. The single exception to this almost unbroken record of improvement is Cambridge, which maintained a very low rate in 1916-1920 (2.5), but had an exceptionally bad year (10.8) in 1921, thus bringing up its average for the quinquennium in 1921-1925. In 1925, perhaps the most noteworthy change is that in Boston, which for the second successive year shows a typhoid increase, and for the first time in years stands at the foot of the New England cities. New Haven reports the lowest rate in its history, and Lynn, the newcomer in the list, makes a remarkably fine showing.

TABLE 2.—*Death Rates of Cities in Middle Atlantic States from Typhoid per Hundred Thousand Population*

	1925	1924	1921-1925	1916-1920	1911-1915	1906-1910
Scranton	0.0	2.8	2.4	3.8	9.3	31.5
Newark	0.0	2.7	2.3	3.3	6.8	14.6
Reading	0.9	5.4	6.0	10.0	31.9	42.0
Yonkers	1.8	2.7	1.7	4.8	5.0	10.3
Rochester	1.9	1.2	2.1	2.9	9.6	12.8
Paterson	2.1	3.6	3.3	4.1	9.1	19.3
Syracuse	2.2	1.6	2.3	7.7	12.3	15.6
Philadelphia	2.3	2.2	2.3	4.9	11.2	41.7
Pittsburgh	3.2	3.9	3.9	7.7	15.9	65.0
New York	3.3*	3.1	2.6	3.2	8.0	13.5
Trenton	3.8	0.8	8.2	8.6	22.3	....
Utica	3.9	....	....	....	....	....
Jersey City	4.1	2.6	2.7	4.5	7.2	12.6
Buffalo	4.5	2.8	3.9	8.1	15.4	22.8
Albany	5.9	12.6	5.6	8.0	18.6	17.4
Camden	7.0	6.3	5.9	4.9	4.5	....

* Rate calculated on figures for population in 1924 with same annual increment added as in 1922-1923 and 1923-1924.

In the Middle Atlantic States (table 2) we find the only other American city (Scranton) besides Lowell reporting no typhoid deaths for 1925. From the quinquennial comparison it appears that fourteen of the fifteen cities in this group had a lower average in 1921-1925 than in 1916-1920. The single exception (Camden) evidently has a typhoid situation that needs examination. While typhoid rates all over the United States have been falling, the five-year average in Camden has steadily increased from 4.5 in 1911-1915 and 4.9 in 1916-1920, to 5.9 in 1921-1925. Moreover, the rates for 1924 (6.3) and 1925 (7.0) are higher than the 1921-1925 average. There must be some local reason for this constant upward trend. Compared with 1924, seven cities in this group had a lower rate in 1925, eight a higher. The increase in New York and perhaps in some other localities may doubtless be attributed in part to the oyster-borne infection, which swelled the list of typhoid deaths toward the end of 1924 and carried over into the first quarter of 1925. Typhoid deaths in New York, for example, numbered sixty-

TABLE 3.—*Death Rates of Cities in South Atlantic States from Typhoid per Hundred Thousand Population*

	1925	1924	1921-1925	1916-1920	1911-1915	1906-1910
Norfolk, Va.	1.5*	2.9	2.8	....	....	....
Wilmington	3.3	5.3	4.7	....	....	....
Baltimore	3.6	2.8	4.0	11.8	28.7	35.1
Washington	5.0	4.3	5.4	9.5	17.2	36.7
Richmond	5.4	7.6†	5.7	9.7	15.7	34.0
Atlanta	18.4‡	15.0	14.5	14.2	31.4	58.4

* Rate calculated on figures for population in 1924 with same annual increment added as in 1922-1923 and 1923-1924.
† Erroneously given as 1.1 in typhoid survey for 1924.
‡ Rate calculated on population figures furnished by the health department.

1. The preceding articles were published, May 31, 1913, p. 1702; May 9, 1914, p. 1473; April 15, 1915, p. 1322; April 22, 1916, p. 1305; March 17, 1917, p. 845; March 16, 1918, p. 777; April 5, 1919, p. 997; March 6, 1920, p. 672; March 26, 1921, p. 860; March 25, 1922, p. 890; March 10, 1923, p. 691; Feb. 2, 1924, p. 389, and March 14, 1925, p. 813.

2. The deaths from typhoid in each city are those reported to us by the respective health departments. The rates have been calculated on the basis of midyear 1925 population, estimated by the method of the U. S. Census Bureau, save that in several instances in which no census estimate is available other estimates are used. These are duly noted in the tables.

seven in the first quarter of 1925, as compared with eighteen in the corresponding quarter of 1924. The increased number of cases due to contaminated oysters unquestionably led to an increase in the number of carriers and also to an increase in contact cases.

The four cities in the South Atlantic states (table 3) for which a comparison of five-year averages is possible showed a marked improvement in three instances (Baltimore, Washington, Richmond) and a practically stationary condition in the other (Atlanta). Atlanta, like the other Southern cities, faces a difficult situation; but is it really any worse than that of Birmingham, which in 1916-1920 had a typhoid average twice as high as that of Atlanta, but in 1921-1925 one that was considerably lower?

TABLE 4.—*Death Rates of Cities in East North Central States from Typhoid per Hundred Thousand Population*

	1925	1924	1921-1925	1916-1920	1911-1915	1906-1910
Canton	0.9	....	....	....	....	....
Grand Rapids	1.3	3.4	1.9	9.1	25.5	29.7
Milwaukee	1.4	1.0	1.6	6.5	13.6	27.0
Chicago	1.5	1.6	1.4	2.4	8.2	15.8
Cleveland	1.5	1.2	2.0	4.0	10.0	15.7
Flint	1.5	....	....	....	....	....
Dayton	1.7	2.4	3.3	9.3	14.8	22.5
Akron	1.9*	1.0	2.4	....	....	....
Youngstown	2.5	4.5	7.2	....	....	....
Detroit	2.7	3.0	4.1	8.1	15.4	22.8
Indianapolis	3.6	3.9	4.6	10.3	20.5	30.4
Cincinnati	4.2	2.5	3.2	3.4	7.8	30.1
Columbus	4.3	3.7	3.5	7.1	15.8	40.0
Toledo	6.3	4.4	5.8	10.6	31.4	37.5

* Rate calculated on figures for population in 1924.

The cities in the East North Central states (table 4) have a perfectly clear record, every one of the ten cities for which data are available showing a lower average for 1921-1925 than for 1916-1920. The reduction in Grand Rapids is particularly noteworthy. Chicago holds the lowest typhoid record for the last five-year period. In this group six cities had lower rates in 1925 than in 1924, and six higher. The two newcomers in the list, Canton and Flint, start out with very low rates.

TABLE 5.—*Death Rates of Cities in East South Central States from Typhoid per Hundred Thousand Population*

	1925	1924	1921-1925	1916-1920	1911-1915	1906-1910
Louisville	5.8	1.9	4.9	9.7	19.7	52.7
Birmingham	9.2	7.5	10.8	31.5	....	....
Nashville	19.8	20.4	17.8	20.7	40.2	61.2
Memphis	28.6	41.2	20.3	27.7	42.5	35.3

The four cities in the East South Central states (table 5) all stand better in 1921-1925 than in 1916-1920, Louisville and Birmingham showing marked improvement. That Memphis still has a milk problem on its hands is shown by a recent study of the milk supply published by the superintendent of health in 1925. Grading of the milk was found impracticable, and was abandoned in 1923 in favor of published milk scores. Pasteurization is not required; in 1924 about half of the supply (49.7 per cent) was pasteurized. The experience of other communities indicates that pasteurization of a larger proportion of the milk supply would be followed by a further reduction in typhoid.

In the cities of the West North Central states (table 6), none of which in recent years have suffered from excessive typhoid, comparison of the quinquennial averages reveals an almost unbroken improvement, only St. Paul showing a slight increase. With one exception, the 1925 rates in this group were higher than those for 1924. Duluth starts out with the very low rate of 0.9.

TABLE 6.—*Death Rates of Cities in West North Central States from Typhoid per Hundred Thousand Population*

	1925	1924	1921-1925	1916-1920	1911-1915	1906-1910
Duluth	0.9	....	....	....	....	....
Kansas City, Mo.	1.9	3.6	5.7	10.6	16.2	25.6
Omaha	1.9	1.0	3.3	5.7	14.9	40.7
St. Paul	2.8	2.0	3.4	3.1	9.2	12.8
Minneapolis	3.3	2.1	1.9	5.0	10.6	32.1
St. Louis	3.9	3.7	3.9	6.5	12.1	14.7
Des Moines	4.7*	2.8	2.2	....	....	....
Kansas City, Kan.	7.7	4.6	5.0	9.4	....	....

* Rate calculated on figures for population in 1924 with same annual increment added as in 1922-1923 and 1923-1924.

The cities of the Southwest (table 7) show uniform improvement in the five-year averages so far as data are available. The 1925 rates in Fort Worth, Dallas and New Orleans are considerably higher than those for 1924. El Paso has responded to our request by sending in complete figures for all the years since 1911, the only one besides Lynn of the cities reporting for the first time to render this service. The proportional reduction in typhoid in El Paso is great and the 1925 figures highly encouraging.

TABLE 7.—*Death Rates of Cities in West South Central States from Typhoid per Hundred Thousand Population*

	1925	1924	1921-1925	1916-1920	1911-1915	1906-1910
El Paso	3.8	11.0	10.8	20.7	42.8	....
Fort Worth	5.2	1.7	6.1	....	....	....
Houston	5.5	5.6	7.6	....	....	....
San Antonio	8.6	5.8	9.3	23.3	29.5	....
Dallas	17.5	8.2	11.2	17.2	....	....
New Orleans	19.8	10.0	11.0	17.5	20.9	35.6
Tulsa	20.9	....	....	...*	....	....

All the cities in the Mountain and Pacific states (table 8) had less typhoid in 1925 than in 1924, contrary to what was observed in other geographic divisions. The decrease was especially notable in Los Angeles and in Portland. All the five-year averages with one exception (Tacoma) also show a reduction.

TABLE 8.—*Death Rates of Cities in Mountain and Pacific States from Typhoid per Hundred Thousand Population*

	1925	1924	1921-1925	1916-1920	1911-1915	1906-1910
San Diego	0.9	....	....	....	....	....
Oakland	1.2	1.3	2.0	2.8	8.7	21.5
Los Angeles	1.8*	4.4	3.0	3.6	10.7	19.9
Spokane	1.8	1.9	4.4	4.9	17.1	50.3
Tacoma	1.9	3.9	3.7	2.9	10.4	19.0
Portland, Ore.	2.1†	6.1	3.5	4.5	10.8	23.2
San Francisco	2.2	2.6	2.8	4.6	13.6	27.3
Seattle	2.5‡	3.2	2.6	2.9	5.7	25.2
Denver	5.0	5.1	5.1	5.8	12.9	37.5
Salt Lake City	6.9	10.1	6.0	9.3	13.2	....

* Rate calculated on population figures furnished by the health department.
† Dec. 1, 1924 - Nov. 30, 1925.
‡ Rate calculated on figures for population in 1924 with same annual increment added as in 1922-1923 and 1923-1924.

The Honor Roll (cities with from 0.0 to 2.0 deaths per hundred thousand) this year numbers thirty (five reporting for the first time), as against eighteen on the list for 1924. There are still six cities in the third rank (rates above 10), Dallas and Tulsa taking the places that Albany and Salt Lake City had last year.

TABLE 9.—*Death Rates from Typhoid in 1935*

Honor Roll (from 0.0 to 2.0 Deaths per Hundred Thousand)			
Lowell	0.0	Cleveland	1.5
Scranton	0.0	Fall River	1.5
New Bedford	0.8	Flint	1.5
Canton	0.9	Norfolk, Va.	1.5
Duluth	0.9	Cambridge	1.7
Newark	0.9	Dayton	1.7
Reading, Pa.	0.9	New Haven	1.7
San Diego	0.9	Spokane	1.8
Lynn	1.0	Yonkers	1.8
Oakland	1.2	Akron	1.9
Los Angeles	1.3	Hartford	1.9
Grand Rapids	1.3	Kansas City, Mo.	1.9
Milwaukee	1.4	Omaha	1.9
Springfield, Mass.	1.4	Rochester	1.9
Chicago	1.5	Tacoma	1.9
First Rank (from 2.0 to 5.0)			
Paterson	2.1	Wilmington	3.3
Portland, Ore.	2.1	Providence	3.4
Worcester	2.1	Boston	3.5
San Francisco	2.2	Baltimore	3.6
Syracuse	2.2	Indianapolis	3.6
Philadelphia	2.3	El Paso	3.8
Seattle	2.5	Trenton	3.8
Youngstown	2.5	St. Louis	3.9
Detroit	2.7	Utica	3.9
Bridgeport	2.8	Jersey City	4.1
St. Paul	2.8	Cincinnati	4.2
Pittsburgh	3.2	Columbus	4.3
Minneapolis	3.3	Buffalo	4.5
New York	3.3	Des Moines	4.7
Second Rank (from 5.0 to 10.0)			
Denver	5.0	Toledo	6.3
Washington	5.0	Salt Lake City	6.9
Fort Worth	5.2	Camden	7.0
Richmond	5.4	Kansas City, Kan.	7.7
Houston	5.5	San Antonio	8.6
Louisville	5.8	Birmingham	9.2
Albany	5.9		
Third Rank (from 10.0 to 30.0)			
Dallas	17.5	New Orleans	19.8
Atlanta	18.4	Tulsa	20.9
Nashville	19.8	Memphis	28.6

The total average typhoid death rate for fifty-nine cities (table 10) is the highest reported since 1921. Early in 1925, case reports from various localities indicated that the disease was prevailing excessively. In Connecticut the state department of health stated that for the first four months there was more typhoid than for any similar period in the last three years. A notable excess in the number of cases reported throughout the United States for the first six months of 1925 was remarked on in *Public Health Reports*, July 17. In some places relatively high typhoid prevalence occurred later in the year. The Maryland state department of health received reports of 197 cases in August, 1925, as compared with 156 in August, 1924. The Ohio state department of health noted an increase of 35 per cent in the cases reported in August, 1925, over the number reported in August, 1924. It is evident that 1925 was a "typhoid year."

TABLE 10.—*Total Average Typhoid Death Rate (1910-1925)*

	Total Population (50 Cities)* Estimated by the U. S. Census Bureau Methods	Typhoid Deaths	Typhoid Death Rate per 100,000
1910	21,125,340	4,143	19.61
1911	21,679,886	3,416	15.71
1912	22,234,865	2,800	12.59
1913	22,788,282	2,923	12.82
1914	23,342,199	2,443	10.46
1915	23,896,616	2,094	8.76
1916	24,368,470	1,874	7.69
1917	24,908,055	1,684	6.76
1918	25,142,605	1,583	6.30
1919	25,702,711	1,006	3.91
1920	26,340,793	934	3.54
1921	26,749,616	992	3.71
1922	27,133,857	862	3.18
1923	27,566,727	866	3.14
1924	28,174,489	870	3.09
1925	28,882,031	993	3.43

* Eighteen cities are omitted from this summary because data for the full period are not available.

A new table has been compiled for this summary to show the difference in typhoid mortality in the large cities of the several geographic divisions (table 11). The greater prevalence of typhoid in the southern part of the United States as contrasted with the northern stands out conspicuously in this grouping, the East South Central, West South Central and South Atlantic cities averaging much higher than the rest of the country. Since the largest cities, i. e., those with populations greater than 500,000, are mainly in the Northern states, it is plain that the grouping of cities according to size without respect to geographic location might well lead to mistaken conclusions as to the connection of size with typhoid mortality.

TABLE 11.—*Typhoid Death Rates in the Various Geographic Divisions in 1925* *

Cities of More Than 100,000 Population in	Population	Typhoid Deaths	Rate
New England states	2,308,206	56	2.42
Middle Atlantic states	11,279,063	333	2.95
South Atlantic states	1,354,748	110	8.12
East North Central states	7,344,968	163	2.22
East South Central states	570,012	92	16.14
West North Central states	2,072,228	64	3.09
West South Central states	717,491	103	14.36
Mountain and Pacific states	3,235,255	72	2.22

* The same cities as in table 10.

THE TECHNIC OF MEDICATION

A SERIES OF ARTICLES ON THE METHODS OF PRESCRIBING AND PREPARING, THE INDICATIONS FOR, AND THE USES OF VARIOUS MEDICAMENTS *

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CHICAGO

(Continued from page 842)

Oil in Capsules.—Oily or resinous liquids, when given in rather small doses (up to 0.5 cc.), may be conveniently dispensed in hard gelatin capsules. If the dose is only 1 or 2 drops, or if the agent is very irritant, it should be dissolved in a little of some bland oil, such as expressed oil of almond. As examples of medicine best given in this form may be mentioned oleoresin of aspidium, which is used as an anthelmintic against tapeworm in a dosage of from 6 to 8 cc. This dose is best divided into twelve or sixteen capsules, one or two of which are taken every ten minutes, until all are consumed. As another example might be mentioned oil of santal, 0.3 cc., prescribed for subacute urethritis, one or two capsules three times a day after meals.

Soft gelatin capsules, generally ovoid, have the advantage over the hard capsules of being more easily swallowed. That is why larger quantities of oily liquids can be administered in this way. The size of 2.5 cc. should not be exceeded as a general rule. Larger sizes are made, but to prescribe them is to invite trouble. To swallow such a large capsule easily, it is well to soften it by dipping for a few moments in water just before putting the capsule into the mouth. Then the capsule is swallowed with another draft of water.

Elastic gelatin capsules are generally not made by the pharmacist but bought by him ready-made from the manufacturer. It is generally considered, though not with good reason, that they are too troublesome to pre-

* This is the thirteenth of a series of articles on "The Technic of Medication." When completed the articles will be assembled in book form.

pare extemporaneously. It is therefore necessary to be acquainted with the various kinds of filled capsules put out by manufacturers and kept in stock by pharmacists. Among these are elastic capsules of castor oil, 2.5 cc.; elastic capsules of copaiba, 0.6 cc., and elastic capsules of oil of santal, 0.3 and 0.6 cc. Manufacturers put up a great many others.

If one is not certain whether the pharmacist has a certain kind of elastic capsules in stock, it is best to leave out the word "elastic" and to permit him to dispense hard extemporaneously filled capsules if he does not have the other variety. However, when a physician has occasion to use a certain oily substance or combination frequently, it is well to see to it that the pharmacist carry it in stock in the form of elastic capsules, as they are not only more easily swallowed but also more elegant. There is a liability of leakage from the hard capsules filled by druggists which, of course, would defeat the purpose of administration in this form.

Cachets.—Starch capsules, also known as cachets, wafers of konseals, are two little disks of dried paste, resembling in shape little soup plates, made to enclose powder placed in the hollow of the two by moistening their edges and pressing them together, so that the edges adhere. They were invented by Limousin of Paris, about 1870. Previous to this time wafers were used to facilitate the swallowing of powders by moistening a circular wafer sheet, placing the powder in the center, and folding over the edges so as to form "a sort of oyster," which can be swallowed easily by floating it in a spoon with a little water. Now, however, we usually have the pharmacist put on the little wrapper.

By means of these starch capsules, we are enabled to give larger quantities of powders at one dose than we can by means of gelatin capsules. Cachets will hold from 0.5 to 1 Gm. of powder.

Starch capsules are probably best prescribed at present by the name cachets, so that, if we were to prescribe charcoal for gastric flatulence, we might order 0.5 and not more than 1 Gm. of it to be sealed into a cachet, one to be used as needed after meals.

Just before use, cachets are dipped in a tablespoonful of water; and, when the entire surface has been thoroughly moistened and softened, which takes only a few moments, the spoon is placed far back on the tongue, and the whole swallowed at one gulp. These directions should be given to patients explicitly, for it has happened that cachets have been opened or chewed by patients unacquainted with this mode of medication, in either case, of course, defeating the object of this method of administration.

Enteric Capsules.—Enteric capsules are desirable when it is necessary to protect the stomach against the medicament, or the medicine against the action of the gastric juice. In spite of a considerable amount of experimentation on the subject, the problem of enteric encapsulation has not yet been solved satisfactorily.[34] The reason for this lies not only in certain chemical and mechanical difficulties presently to be discussed, but also in the fact that the laws of osmosis conspire against successful enteric encapsulation. Enteric capsules are nothing more or less than semipermeable membranes; and, even if their solubility is such as to make them resist solution in the stomach and yet permit them to disintegrate in the intestine, diffusion into or out of the capsule may occur if a soluble substance is contained in them. If the capsule is permeable to the substance, it may diffuse into the surrounding fluid. If the capsule is impermeable to the substance contained in it but the substance is soluble, then water may diffuse through the capsule, causing the contents to swell and perchance burst in the stomach. This has been shown by Sahli[35] to be the objection to keratin coating, and it probably also holds good for other similar films.

Coating with phenyl salicylate, which is obtained by rolling the pill mass in melted phenyl salicylate, has the objection that the thickness of the coating is difficult of control, and that too thin a coat may permit disintegration in the stomach, while excessive thickness of the coat may resist disintegration in the intestine, so that the pills may pass through the alimentary tract unchanged.

A moderately successful attempt at the production of enteric capsules is by making use of the influence of formaldehyde on gelatin, introduced by Sahli under the name "glutoid capsules." By this means a compound is formed that has varying degrees of insolubility in the gastric and intestinal juices chiefly according to the relative proportions of the agents and the age of the product. According to the method described by Scoville,[36] the filled capsules are immersed for thirty seconds in 1 per cent aqueous solution of formaldehyde at ordinary temperature, drained quickly, dried, and stored for two weeks before using. The disadvantage of this process lies in the peculiarity inherent in colloids whereby they change in solubility under the influence of age. It has been shown that, by keeping these capsules for a much longer time, they may become insoluble in the intestine. This method is applicable only to filled capsules: empty capsules cannot well be hardened by this process, as they are liable to undergo distortion so that they cannot be properly closed.

There is a fair prospect that the interest aroused by cholecystography after peroral administration of tetraiodophenolphthalein will definitely solve the problem of enteric encapsulation by bringing to bear on it the aid of the roentgen rays. This dye, the value of which for the visualization of the gallbladder is now well established, has thus far had to be given intravenously to obtain reliable results. When given by mouth, it is liable to cause vomiting, which of course vitiates the result. The effect of the gastric acid on the agent is also objectionable. Stewart[37] has obtained satisfactory results in cholecystography by coating gelatin capsules with keratin just before use. The tetraiodophenolphthalein, being rather unstable when exposed to air, is best obtained in an ampule containing the required dose (3 Gm.). This is opened just before use and packed into ordinary gelatin capsules, which are then dipped into a solution of keratin, 7 parts; diluted alcohol, 50 parts, and ammonia water, 50 parts. The capsules are then placed on a screen to dry and are usually ready for use within five or ten minutes. Coating of gelatin capsules with stearic acid might possibly do away with the necessity of preparation just before use.

A moderately satisfactory substitute for these coatings is enclosing the pill mass in a double gelatin capsule, one within the other. In addition, the previously discussed castor oil-wax excipient, suggested by N. S. Davis, might be used, thereby minimizing the dissolving of the agent in the stomach and securing chiefly enteric action.

(To be continued)

34. Du Mez, A. G.: J. Am. Pharm. A., May, 1921, p. 372.

35. Sahli: Ueber Glutoidkapseln, Deutsche med. Wchnschr. **23**: 6 (Jan. 1) 1897.
36. Scoville, Wilbur: South. Pharm. J., 1915, p. 745.
37. Stewart, W. H.: Personal communication to the author.

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SATURDAY, MARCH 27, 1926

CRITICAL CONSIDERATIONS OF EDEMA

Edema has long presented one of the perplexing problems of pathology. It may appear when there is embarrassment of the peripheral circulation resulting from heart failure. It is observed in those forms of chronic parenchymatous nephritis to which the name nephrosis has been applied since 1905, when it was introduced by Friedrich Müller. The symptoms are frequently observed in acute glomerular nephritis. The specialist has likewise recognized the appearance of edema under far less definite conditions. Soda edema may follow extreme alkali therapy in diabetic acidosis; nutritional edema attends dietary restrictions and was particularly conspicuous in the central empires during the World War as war dropsy. Localized edema occurs at the site of inflammations; after some forms of intoxications, edema may arise either locally or generally; and in angioneurotic edema the possibility of a perversion of the nervous control of blood volume regulation is brought into consideration. With such a diversity of aspects before us, it is not difficult to appreciate McLean's [1] contention that the fundamental problem is that of the physiologic regulation of the volume of the internal environment, including the blood and the tissue fluids. It appears, as McLean states, that edema is not an entity in itself, due always to the same underlying causes, but rather a symptom just as dyspnea, which may result from various disturbances of the regulatory process. Progress in our understanding of edema is therefore likely to be promoted only as the varied possibilities are approached independently and their genetic aspects separately disentangled. Part of the work of understanding will consist in rationally discarding untenable hypotheses or, at any rate, restricting them to the special aspects of disease, to which alone they may properly apply.

In the older conception of edema the condition was pictured as an excessive accumulation of lymph, modified or unmodified, in the cells, intercellular spaces, or serous cavities of the body. As Wells [2] has remarked, there would be no difficulty in understanding the disorder as the result of simple passive congestion of the lymphatic circulation. No chemical factors are involved. Widal [3] aroused a new interest in the subject through the demonstration of the influence of chlorides on the behavior of fluid in the body, particularly under pathologic conditions. The organism responds to increased ingestion of such salts by increase in volume, and markedly so in persons with a tendency to edema. Reduction of edema through a salt-free regimen is based on this phenomenon. McLean has pointed out, however, that the results of giving potassium chloride are quite different from those provoked by the sodium salt, and it is likely that the prevalent opinions concerning the rôle of chlorides in edema would not have been so firmly established had the quantitative determination of sodium and potassium been as simply carried out as is that of the chlorides. In a renewed study of the excretion of chlorides, de Wesselow [4] of St. Thomas's Hospital, London, has observed that in interstitial nephritis without edema the chloride concentration power of the kidneys runs parallel with the failure of capacity to concentrate urea. In nephritic patients with edema, on the other hand, two groups of results seem to occur. In one of these the plasma content in chloride is low, while the edema fluid is rich in chlorides; and in these patients the edema appears to be of extrarenal origin. In the other group the chloride concentration frequently is good; it is suggested that in such patients defective water excretion is the underlying cause of the edema. De Wesselow regards it doubtful whether true dissociation of the concentrating capacity of the kidneys for urea and chloride occurs. On his somewhat speculative assumptions, chloride retention would cease to be an all-important factor in the production of edema, but chloride distribution in the body would play a large part in determining the distribution of water between blood and tissue fluids. This is in partial contradiction to Widal's belief that the edema of the nephritic patient is the result of a primary chloride retention due to the renal defect, the water retention being a secondary but necessary consequence if the chloride content of the body fluids is to be kept within a range compatible with life.

Nothing has been stated here of other much discussed possible influences that may affect the normal distribution of fluid in the body. Changes that are colloidochemical in nature must not be overlooked. The lowered surface tension in the blood serum emphasized by Clausen in nephrosis with edema is a significant finding. The peculiarities of the disappearance of intradermally injected salt solutions in edematous

1. McLean, F. C.: Edema as a Problem in Physiological Regulation, Physiol. Rev. **5**: 618 (Oct.) 1925.

2. Wells, H. G.: Chemical Pathology, Philadelphia, W. B. Saunders Company, 1925.

3. Widal, F., and Lemierre, A.: Pathogénie de certains oedèmes brightiques: action du chlorure de sodium ingéré, Bull. et mém. Soc. méd. d. hôp. de Paris **20**: 785, 1903.

4. De Wesselow, O. L. V.: The Excretion of Chlorides by the Healthy and Diseased Kidney, Quart. J. Med. **19**: 53 (Oct.) 1925.

patients present a unique problem.[5] Study of the questions at issue has been hampered by the difficulty of reproducing edema in any adequate manner in experimental animals. There is at best little satisfaction to be derived from the outlook of the recent reviewer [1] who points to the clinic as offering the best prospect of success. He remarks that the physicochemical method, which has been so fruitful in the past, may be expected gradually to disclose as yet hidden mechanisms. The more general approach from the standpoint of the organism as a whole, with an attempt to solve the nature of the regulatory process, to discover the unknown "influences" and the manner of their control, offers a tempting field for investigators. Meanwhile, he concludes, the more and more detailed observation of patients with edema, the search for and correlation of deviations from the normal, may bring to light new phenomena, each being the starting point for further investigation. By a combination of the three methods, in all of their various ramifications, may one hope for solution of the problem and control of the condition of edema.

ENDEMIC GOITER: THE LESSON FROM NEW ZEALAND

Few months have passed of late without contributing new evidences sustaining the hypothesis that endemic goiter is caused by a deficiency of iodine in the diet. Europe and America, far apart though they are, different in manifold features of geology and geography, often unlike in racial characteristics, and varying in the modes of living, have nevertheless given comparable answers to the question of the incidence of goiter and the preferable means of prophylaxis. The long held belief that the malady is characteristic of mountainous countries has been completely dispelled; one need merely cite the experience of our Great Lakes region in this connection. It does not follow, either, that goiter is to be found to an unusual extent where limestone is abundant. It is generally assumed, however, that proximity to the sea insures against goiter, owing to the wafting inland of ocean spray that includes not only chloride but also some iodide. The most conspicuous goiter regions of Europe and America are in the interior of the continents, whereas the coastal districts enjoy a comparative immunity.

The two chief islands of the dominion of New Zealand comprise a territory within which every inhabited locality is not more than a hundred miles from the sea. One might well expect immunity from goiter in such a country. Yet the elaborate study of Hercus, Benson and Carter [6] of the University of Otago, New Zealand, has disclosed a widespread prevalence of the disorder. Thirty-one per cent of the school children are affected; in some areas, 60 per cent of them show some degree of thyroid enlargement. The native Maoris, comprising about one third of the total population, are by no means immune. For many generations their native language has included the word "tenga," meaning goiter.

An explanation of this unexpected finding has arisen out of the Otago investigations. Topographically, New Zealand is most varied. There is a remarkable range of geographic conditions. The study shows that, roughly, the incidence of goiter is in general inversely proportional to the amount of iodine in the soil, which determines the inclusion of the element in the plant and animal food consumed by the population of a given district. Where exceptions to this occur, it has been noted that the required iodine seems to be supplied by the drinking water rather than in foods. Among coastal Maori tribes where fish and edible seaweed bulked largely in the dietary, goiter was not known, though it occurred among the inland tribes long prior to European occupation.

The record of a supposedly immune island country such as New Zealand is a lesson in the importance of concerted attack on a preventable disease. Out of 135,282 male recruits between the ages of 20 and 45 examined by military medical boards during the period 1916-1918, when conscription was in operation, 1,581 were declared unfit for active service on account of thyroid enlargement. This is not primarily the result of "civilization," for goiter has been found not uncommon in horses, sheep, cattle, dogs and trout bred in New Zealand. It is not racial, for two races with differing habits live there side by side. If it is true that endemic goiter is "the stepping stone to cretinism" and the beginning of other forms of thyroidal pathogenesis, the importance of effective preventive measures requires no argument. The story of New Zealand should serve to strengthen our own prophylactic purposes and programs.

PHYSICAL APTITUDES

There is a growing tendency in this country to consider health one of the foremost objectives of education, taking its place with, or perhaps even surmounting, the consideration of mental development and social progress. It is not easy to define the end sought. To consider health in terms of mere freedom from disease falls far short of the ideals of the educational ambitions of the present day. A more adequate and satisfying definition of health pictures it as "the quality of life that renders the individual fit to live most and to serve best." [1]

Physical competence plays an important part in the sort of health fitness that is here portrayed. Inevi-

5. McClure, W. B., and Aldrich, C. A.: Time Required for Disappearance of Intradermally Injected Salt Solution, J. A. M. A. **81**: 293 (July 28) 1923.

6. Hercus, C. E.; Benson, W. N., and Carter, C. L.: Endemic Goiter in New Zealand and Its Relation to the Soil-Iodine, J. Hyg. **24**: 321 (Dec.) 1925.

1. Williams, J. F.: Personal Hygiene Applied, Philadelphia, W. B. Saunders Company, 1925, p. 20.

tably there is a demand for some mode of measurement that is applicable to educational schemes, so that the degree of attainment can be evaluated. This is true in the routine of school work where mental tests of one sort or another form part of the regimen. It is likewise expected nowadays with respect to the physical fitness of the adolescent. If it is true that the ideal method of testing intellectual achievement is not yet in sight, what shall be said regarding examinations in the field of physical competence?

Strength and endurance determined in combat or competitive sport are far from satisfactory measures of promising physique. A group of physiologists [2] at Guy's Hospital in London have properly pointed out that physical fitness is relative and does not necessarily mean good physique; the efficient performance of work involves the interaction of all the systems of the body. Their argument that the condition is so complex and the power of adjustment so great that no single measurement can be an infallible guide scarcely needs further emphasis. The British writers remind us that one man may be physically efficient for a definite piece of work under certain conditions, such as temperature and moisture of the air, which would not suit another equally healthy man. There is an individuality in all men, each having an optimum of speed and environment.

The difficulties in the way of attempting to bring about uniformity are seen in the actual tests made on students in London. Of the familiar procedures, vital capacity proved to be an unreliable index despite the claims of Dreyer and his followers. Efficient respiration, so the criticism reads, is not determined alone by the capacity or mobility of the chest and lungs: the process involves the coordination of pulmonary ventilation with the activity of the heart, the circulation and the oxygen capacity of the blood—factors that cannot be determined by the spirometer. Estimations of pulse pressure, of ability to hold the breath and of related performances have obvious limitations. Comparisons of the pulse rate at rest and after exercise seem to give the best single simple indication of physical fitness. The reasons are, perhaps, not far to seek. The circulatory pump, the heart, must be adjusted to the needs of the body. Its efficacy represents an adaptation of both nervous and muscular control to bodily needs; yet there are persons in whom the heart is far better developed than the skeletal muscles.

The conclusions of Hambly, Pembrey and Warner [2] will provoke thoughtful consideration even if they do not invite approval. To them there appears to be no real test for physical fitness for every and any kind of occupation other than the old method of trial and error. A man in perfect health, they remark, may be fit for one form of muscular work rather than another, and his capacity, which is predetermined by his ancestry and development, can be rendered manifest only by the repeated performance of the work in question. If all of us thus need to be placed "on trial," as happens so commonly to the rank and file of human kind, it will assuredly be helpful to discover an "aptitude test" for physical performance. The psychologists are leading the way toward a similar goal in the field of mental equipment.

2. Hambly, W. D.; Pembrey, M. S., and Warner, E. C.: The Physical Fitness of Men Assessed by Various Methods, Guy's Hosp. Rep. 75: 388 (Oct.) 1925.

Current Comment

"ETHICS AND THE MEDICAL PROFESSION"

A few weeks ago THE JOURNAL considered editorially the physician of the future, noting that the practice of medicine is changing with the times. The entrance into medical service of corporations dispensing diagnosis and some treatment on a wholesale basis, and competing, perhaps unfairly, with the individual physician by means of uncontrolled newspaper advertising, has raised a problem that may to some extent menace the actual existence of the individual practitioner. In a consideration of medical ethics in the current issue of the *Survey*, Dr. Richard C. Cabot, himself intensely individualistic, although socially minded in his writings, comes to the support of such mechanized medical practice. It should be remembered that the editorial advisor of the *Survey* in matters of health is Dr. Haven Emerson, whose views as to the socialization of medicine are not entirely unknown to the widely read physician. That part of the code of ethics which concerns contract practice forms the major subject of Dr. Cabot's consideration of one trend in the relationships of medicine to the community. He condemns "lodge practice" unreservedly as being bad both for patient and for physician. He feels, however, that the factory physician, the mine doctor, the director of a union health center, the department store physician, and similar practitioners, while certainly doing contract practice and certainly competing with the private practitioner, do so to the great advantage of the public served. And he is unable to see much difference between such industrial practice and that of the corporations selling periodic physical examinations. Furthermore, Dr. Cabot has convinced himself that organized commercial service is better than that of the private physician. Apparently he is but little concerned with the present status of the individual physician, and perhaps even less concerned with the professional status of the physician of the future. It will, of course, be remembered that he was among the first and most vociferous proponents of group practice, again without any thought of the effects that such a system has on the development of the individual practitioner. While he argues for collective practice and a sort of socialized medicine, the code of ethics governing the medical profession gives him but little pause. Of course, it is "of interest," to use his own words, but after all not nearly so much of a force for ethical advance as intimate contact of medical men with other medical men "better than themselves, where, by osmosis, nobler habits of thought and action seep across from

teacher to pupil, from chief to intern, from colleague to colleague without a word spoken on the subject." One is inevitably reminded of certain direct communications with the Deity which from time to time inspired prophets have claimed as their sole prerogative. Nevertheless, when some ninety thousand physicians are concerned, it would not perhaps be wholly wise to rely on the inevitable receipt and comprehension of such telepathic influences.

TYPHOID IN 1925

The reason for the substantial and widespread increase in typhoid in the large cities in the United States in 1925, shown in our annual summary (p. 948), is not clear. This is the most considerable proportional increase (10 per cent) since these summaries were undertaken in 1910. The greater prevalence of the disease is not to be attributed clearly to any universally acting cause, since in one geographic division—the Mountain and Pacific states—the 1925 rates are lower than those for 1924 in every city. In the other geographic divisions, thirty-four cities experienced an increase, twenty-seven a decrease. Various factors may conceivably have been at work. There has obviously been a progressive change in the population with respect to antityphoid inoculation. The protective effect afforded by the army inoculations in 1917-1918 may be wearing off, and *pari passu* a new uninoculated generation of young males is reaching the typhoid age. It is difficult to deny some weight to this factor, and while it should be operative in the Mountain and Pacific states as well as elsewhere, other causes making for reduction may have obscured it. It seems to be true that in most of the country 1925, like 1921 and 1913, was a "typhoid year." There does not appear to have been any extensive prevalence of water-borne disease, and barring the oyster infection early in the year no particular multiplication of sources of infection seems to have occurred. It is tempting to relate excessive typhoid prevalence over a wide territory to some general factor such as weather conditions, but it will be necessary to collect more data before this aspect of the problem can be profitably approached. In the meantime, the annual fluctuations brought out in these summaries will suggest to epidemiologists various lines of inquiry.

SMALLPOX IN THE UNITED STATES IN 1925

Smallpox—the word recalls at the same time the horrors of disease and the triumphs of preventive medicine. We are reminded that, before Jenner's utilization of vaccination to guard against smallpox, the malady was causing one tenth of all the deaths of the human race, while nearly twice as many persons were permanently disfigured by its ravages. Indeed, it has been computed that during the eighteenth century 50,000,000 people died of smallpox in Europe.[1] In contrast with this are the striking achievements in prevention resulting through systematic vaccination. Thus, this procedure in the six provinces near Manila, P. I., with a population of more than a million and a former death rate from smallpox exceeding 6,000, has resulted in eliminating all mortality from the disease among the vaccinated.[2] There are today many physicians who have never seen a case of smallpox. Yet, a century after the death of Jenner, to whose memory London erected a monument as a partial expression of its gratitude for his benefactions, the lesson of his life work has not been adequately learned in many quarters. How else shall we account for the persistence of neglect even in the enlightened United States? A recent report of the U. S. Public Health Service[3] contains this significant statement: The total number of cases reported for the states for which comparable figures for eleven months of the three years are now available are as follows: 1923, 21,233 cases; 1924, 43,029 cases; 1925, 31,037 cases. The increase in 1924 over 1923 was 103 per cent, and the decrease in 1925 from 1924 was 28 per cent. The figures for 1925 in these states were 46 per cent higher than those for 1923. This is not the story of a single section; it comprises thirty-eight states, among which the New England group alone can claim reasonable exemption, this year only, from smallpox. The same issue includes in the usual current weekly reports of the prevalence of disease such items as 36 cases in Alabama, 9 in Arkansas, 130 in Florida, 15 in Georgia, 61 in Illinois, 41 in Iowa, 74 in Louisiana, 26 in North Carolina, 51 in Oregon, 17 in South Carolina, 21 in Tennessee, 81 in Texas—incomplete records that point a moral. It is not the negligence of the medical profession, for the physician appreciates in every detail the necessary measures for prevention. The public is at fault: it has become imbued with a feeling of safety against smallpox and has become indifferent to the necessity of never-failing preventive measures. The lessons of vaccination are clear and convincing. How long shall the prevailing lethargy in many quarters continue to endanger the health and comfort of millions?

THE DEFEAT OF THE STREPTOCOCCUS IN MEASLES, ERYSIPELAS AND PUERPERAL SEPSIS

When the announcement was made that Drs. George F. and Gladys Henry Dick had shown that scarlet fever is a disease similar to diphtheria in that the streptococcus elaborates a toxin which is the causative agent, medical philosophers predicted that other investigators would soon reveal similar causative agents for related diseases. It appears likely that these predictions are to be successfully realized within the current year. In this issue of THE JOURNAL appears the report of the investigations in measles by Drs. Ferry and Fisher of Detroit, who have elaborated a skin test for measles with toxin prepared from an organism found in the blood of patients suffering with this disease. This organism appears to be the same as that first described by Tunnicliff. Ferry and Fisher emphasize the fact that

1. Fisher, Irving: Report on National Vitality, Its Wastes and Conservation, bull. 30, Committee of One Hundred on National Health, July, 1909.

2. Williams, J. F.: Personal Hygiene Applied, ed. 2, Philadelphia, W. B. Saunders Company, 1925.

3. Smallpox in the United States, 1925, Pub. Health Rep. **41**: 262 (Feb. 12) 1926.

their organism is aerobic, whereas, the Tunnicliff organism is also aerobic in cultures of the second generation. Experiments are also being made by other investigators with streptococci associated with erysipelas and puerperal sepsis, and preliminary reports of their work indicate the possibility of similar success. Moreover, other organisms than the streptococcus are now being studied with relation to toxin production, notably the staphylococcus and more recently the tubercle bacillus. If these investigations are confirmed, with the widespread acceptance accorded to the Dick discoveries, it may well be that the present decade will pass into history as the one that saw the streptococcus defeated by medical science.

THE MODEL MANUAL OF THE VETERANS' BUREAU MEDICAL SERVICE

The standardization of laboratory procedure is difficult because of individual preferences in technic. The United States Veterans' Bureau has just issued a clinical bulletin [1] which is notable among laboratory manuals in its method of determining standard procedures. The work arose out of the need for a uniform, simple, sensitive Wassermann technic that would eliminate a maximum number of false positive reactions and that could be performed with reasonable accuracy by the average laboratory technician. After prolonged correspondence, a procedure was adopted which, it is claimed, is sensitive, gives few false positives, requires but one antigen and is rapid of execution. The bulletin gives in concise, clear form everything that one who is setting up a Wassermann laboratory needs to know. It contains a list of the apparatus required, tells how to clean this apparatus and how to care for it, and gives directions as to how to obtain specimens and how to prepare reagents. Of especial value are the tabular instructions of how to titrate antigen, perhaps the most puzzling and tedious of the procedures required of a Wassermann technician. An experienced laboratorian will recognize that even omissions are carefully intentional. For instance, the mysteries of the water bath thermostat are not explained. Thus the temptation to meddle with it is partially removed. The standard technic published in bulletin 10 might well be adopted by any laboratory.

COOPERATION BETWEEN MEDICAL ORGANIZATIONS AND THE PUBLIC

Annually, for several years, one issue of the *Wisconsin Medical Journal* has been a lay number,[2] and has been distributed to eight thousand people. Furthermore, many state medical societies have worked out plans for extending the benefits of modern medicine to the public. In Michigan, the Joint Committee on Public Health Education has arranged lectures before parent-teacher associations and high school groups, and has found the public eager to listen and anxious to cooperate.[3] The Kings County Medical Society of Brooklyn has gone even further by voting to admit laymen as associate members of the society.[4] To be sure, the state society must act on this vote before it becomes effective. At all events, the tendency displayed in Wisconsin, in Michigan and in Kings County is a healthful one in every sense of the word. Traditionally, the mystery that has surrounded the dissecting room and the laboratory has excluded the public. For centuries the public did not care. Now it does care. If it cannot understand the whole subject of medicine, it wishes to have explained, clearly, such portions as it can understand. It is one office of medicine to direct public opinion in matters of health along beneficent channels to sound conclusions. Apparently, scientific medicine, in a dignified way, is accepting its opportunity.

1. United States Veterans' Bureau Medical Service Clinical Bulletin no. 10, Standardization of Laboratory Work in Hospitals and Regional Offices—The Wassermann Test, compiled by Philip B. Matz, M.D.
2. Evans, Edward, in discussion on Graduate Medical Education, abstr. J. A. M. A. **86**: 757 (March 13) 1926.
3. Sundwall, John: University Extension Work—An Adventure in Public Health Education, abstr. J. A. M. A. **86**: 757 (March 13) 1926.
4. Medical Society Votes to Admit Laymen, Boston M. & S. J. **194**: 415 (March 4) 1926.

Association News

ANNUAL CONGRESS ON MEDICAL EDUCATION, MEDICAL LICENSURE AND HOSPITALS

Held in Chicago, Feb. 15, 16, 17 and 18, 1926

(Continued from page 876)

FEDERATION OF STATE MEDICAL BOARDS

FEBRUARY 17—MORNING

Ten Years of Progress

DR. JOHN S. RODMAN, Philadelphia: To the National Board of Medical Examiners this is an important anniversary, as it marks the completion of the first decade of its life. The national board has granted certificates by examination to 740, has registered 2,642, has examined in part I of its now divided examinations 1,723, in part II, 912, has increased its recognition by state medical examining boards from seven to thirty-four in addition to the Canal Zone, Hawaii and Porto Rico, has established reciprocal relations with the Triple Qualification Board of Scotland and the Conjoint Examining Board of England, and has established subsidiary boards in fifteen of the larger medical centers of this country. Candidates for the board's certificate have come from all the seventy class A medical schools in this country, and from the following foreign schools: Beirut, Brussels, Cambridge, Dalhousie, Edinburgh, Hungary, Kazan, Kiel, London, McGill, Manitoba, Melbourne, Moscow, Naples, Odessa, Oxford, Petrograd, Prague, Toronto and Vienna. The ten medical schools that have provided the largest numbers are: Harvard, 385; Pennsylvania, 253; Johns Hopkins, 209; Rush, 176; Woman's, 121; Cornell, 109; Columbus, 91; University of Virginia, 69; Yale, 67; Oregon, 50.

During this decade, certain changes have been made in the teaching of medicine. We believe that much more stress should be placed on the actual knowledge needed to make a good practitioner and much less on the refinements and specialties than has been done in former years. The national board's examinations have been developed so that when a candidate has satisfactorily completed the series, the board will have no hesitation in certifying to the fact that he or she may safely be granted the privilege of practice. Comparisons show a lower trend for the grades given by the national board than those given in the medical schools. Of the changes now taking place in medical education, none has been more important, we believe, than the effort to correlate the fundamental with the clinical branches. The study of anatomy is made, in a few schools, a living thing because it is taught with a direct functional bearing. In physiology and in physiologic chemistry, too great a distance separates these subjects from the clinics. In pathology and bacteriology, it seems that the training of the board's candidates has been

more uniform and has been more "clinicalized" than in the former subjects. The proper time to teach the subject of materia medica and pharmacology is not until students have finished the subjects of anatomy, physiology and chemistry, which is done in the first two years, thus placing pharmacology properly in the third. The percentage of failures in part I has been about 22. The percentage of failures in part II has been a little over 11, or half of that in part I. In medicine, surgery, obstetrics and gynecology, the candidates have shown more proficiency in memorizing facts concerning disease in general than in the demonstration of the application of this knowledge on the patient. The board hopes that its candidates will show in the future more understanding of such fundamental things as wound healing, inflammation, fracture and dislocations, and less about brain tumors and thyroid surgery. The board feels that too much time is given to the surgical specialties in the undergraduate years. Taken as a whole, these few years have convinced the national board that medical education in this country is fundamentally sound.

DISCUSSION

DR. H. S. ARNOLD, Boston: Starting with considerable doubt on the part of this organization as to the wisdom and action of a national board, you have loyally helped us. Almost all the members of this organization have recognized the certificate of the national board. There was, I think, some feeling at first that the board might replace the work of the state boards. That is practically out of the question. We have never had any intention of such work. As our aim was to get an examination that ought to be acceptable to all the state boards, we have to take a standard which would be acceptable to the highest state board in the country. Without any criticism of state boards that do not come up to the highest standard, we realize that the conditions in various parts of the country and different states require somewhat different treatment. We do not believe that there should be a federal supervision of requirements for license.

DR. WILLIAM JEPSON, Sioux City, Iowa: If you were to take a hundred papers and examine them, you would generally find about four or five which are the product of superintellectual men, and if you would grade the rest of the papers in accord with those, the rest would all be thrown out. Those men should have an opportunity to subject themselves to a further examination so that they are really qualified, and then they should have the advantage of not being restricted in their practice to one particular state.

DR. T. J. CROWE, Dallas, Texas: I think I was the first objector to the National Board of Medical Examiners. Since that time my eyes have been widely opened. I have been trying as hard as any one could to get acceptance and wrote our bill so that at any time when the personnel of the Texas board changes it will be possible for Texas to accept the diplomates of the national board.

DR. JOHN M. DODSON, Chicago: The history of this movement is to me one of great interest. I was interested in it as long ago as 1906, when I wrote a letter to THE JOURNAL advocating what is substantially today the working plan of the board. One of the most pernicious and ridiculous provisions in our state laws is the exclusion from the business of examining candidates for licensure of the only men in the state who were fit to do it. The business of examining and testing men requires skill and care and training and experience, and men who have had that experience in the medical profession are men who are engaged in the business of medical teaching and examining. It is very gratifying to learn that thirty-four states now accept the certificate of the board. In our peculiar form of government, it is the one and only solution that will make a medical man free from the penalty which so many have experienced of being required on the basis of health or family to move to another state years after beginning practice and find themselves faced by a sort of examination which no man ought to be asked to take at that period after his preliminary study.

DR. JOHN S. RODMAN, Philadelphia: We have gone on the principle from the very first that those best fitted to teach are best fitted to examine.

DR. G. M. WILLIAMSON, Grand Forks, N. D.: The Conjoint Examining Board of England and the Triple Qualification Board of Scotland recognize the board.

DR. JOHN S. RODMAN, Philadelphia: I should have explained the reciprocal relation existing between the Conjoint Examining Board of England and the Triple Qualification Board of Scotland and the National Board. The arrangement is that those two boards of Great Britain accept the candidates of the national board after they have passed and received the diploma of the board into their final or clinical examination, and we do likewise.

Admission of Foreign Medical Graduates to Licensure Examination as Handled by the Michigan Medical Board

DR. GUY L. CONNOR, Detroit: Subsequent to the World War, it became apparent to the Michigan medical board that something would have to be done to curb the influx of undesirable foreign medical applicants. Many of these were not the highly educated physicians who formerly came to us but were as undesirable in their own country as they were here. Certain foreign medical schools have been giving war service as credit for medical school work. In our experience, the German and Austrian schools have been the worst offenders in this respect. We also have received all sorts of fake credentials from some of the foreign institutions. Under the Michigan rule, there are two distinct classes of foreign medical applicants: group 1: those who have graduated from medical schools located in the British Empire, France, Italy, Mexico, Netherlands, Norway, Portugal, Spain, Sweden and Switzerland; group 2: those who have graduated from medical schools located in other foreign countries than those mentioned above. Those in group 1 who have fulfilled the Michigan requirements are allowed to take the board examination. Those in group 2 who have fulfilled the Michigan requirements save for their medical college of graduation have first to complete the additional educational course of one year in a satisfactory manner, and then they have to take the board's examination, the same as group 1.

DISCUSSION

DR. B. U. RICHARDS, Providence, R. I.: We shall have to handle this matter in one of three ways. One is for the men of the examining boards to accept, without question, the diplomas of foreign schools. Another method is for us to secure all evidence possible regarding the institution in question. The third method is the best one, it seems to me: that recommended by Dr. Connor of Michigan, that a year in an American college be required. Yesterday the statement was made by Dr. Judd that graduates from medical colleges abroad receive their diplomas about two years earlier than our American candidates. That being the case, that is one reason why such men ought to be willing to give a year's study in this country.

DR. ALEXANDER MACALISTER, Trenton, N. J.: Foreign applicants in New Jersey are required to file, in addition to our regular application, all their original credentials; i. e., certificates covering preliminary education, course book, certificates and diplomas covering medical education and certificates covering hospital work, together with translations made by the consul general of the country in which the schools, universities and hospitals are located. The number of students from the rural districts is decreasing, and of the students from the cities an increasing proportion are of foreign birth or parentage, with caste traditions from the Old World. The American physician is disappearing along with the family practitioner.

DR. LOUIS B. WILSON, Rochester, Minn.: We have all the time, in the Mayo Foundation, foreign graduate medical students. Some years ago we became of the belief that graduate medical students who are to come in contact with patients certainly should come under the police regulations of the state. We propose for the consideration of the state medical examining boards that some means be included in your rules and regulations whereby the bona fide medical graduate student from a foreign country (make it an English-speaking country, if you please) might be given some

form of temporary license which should be granted only after the same examination as that required of candidates for license to practice in general, and that that license then be terminated at the end of the man's residence as a graduate student in an accepted university.

DR. I. D. METZGER, Pittsburgh: In our law this basic principle holds: A man's license is just as valuable as the credentials he files in the department of public instruction. If those credentials are not reliable, his license is not reliable. We have found two candidates who did not know the first thing about medicine, yet they carried with them diplomas, certificates from hospitals, and all the credentials that might appear to be needed. Therefore, he must have credentials from the medical school; he must have a photograph which is identified, signed and sealed by that medical school. Both of these must be viséed by the American consul in the district in which the school is located from which he claims to have graduated. Our law says also that all applicants shall come from schools that have been inspected by a board. Obviously, we cannot inspect these foreign schools. Therefore we say to a man, "You must have American credentials. If you want to enter our state, you must have a year of education in Pennsylvania." We require the intern year regardless of what internship they have had before. After that we require written and practical examinations. The examinations are taken in English. We in the East get a lot of these people. They bring all the influence that they can possibly marshal to bear on our board, but we must be exceedingly careful.

(To be continued)

THE DALLAS SESSION

Diagnostic Clinics at Dallas

A series of diagnostic clinics, similar to those at the last two annual sessions, will be held at Dallas on Monday, April 19. The Local Committee of Arrangements in charge of this important feature of the scientific program has arranged for all necessary clinical material. The clinics will be held in section meeting halls and the detailed schedule will be available for distribution at the Registration Bureau on the opening day of the session.

The general subjects and the names of physicians who have accepted assignments on this program are:

Practice of Medicine—L. F. Barker, Baltimore; Harlow Brooks, New York; Henry A. Christian, Boston.

Surgery—Carl B. Davis, Chicago; Frank H. Lahey, Boston.

Obstetrics—J. O. Polak, Brooklyn.

Ophthalmology—Walter R. Parker, Detroit.

Otolaryngology—George E. Shambaugh, Chicago.

Pediatrics—H. F. Helmholz, Rochester, Minn.

Pathology—C. C. Bass, New Orleans; Francis Carter Wood, New York.

Neurology—L. J. Pollock, Chicago.

Dermatology—Fred Wise, New York.

Urology—Frank Hinman, San Francisco.

Orthopedic Surgery—Philip Kreuscher, Chicago; Arthur Steindler, Iowa City.

Proctology—Jerome M. Lynch, New York.

Extension of Final Limit on Railroad Tickets

The lines of the Southwestern Passenger Association have authorized an extension of final limit of fifteen days with final honoring date, May 12, 1926, on deposit of certificate with joint agent at Dallas and payment of a fee of $1 at time certificate is deposited. Other lines that have authorized similar extension are the Southeastern Passenger Association, the Trans-Continental Passenger Association and the Western Passenger Association. The Central Passenger Association has authorized such extension only from points on the Chesapeake & Ohio and Norfolk & Western railways, east of Cincinnati and Louisville. Only those passenger associations that have made such authorization are mentioned above. It is to be definitely understood that some of the passenger associations have not granted similar extensions.

Teachers of the Diseases of Children

The Association of American Teachers of the Diseases of Children will have its annual luncheon at the Adolphus Hotel in Dallas, Monday, April 19. A meeting of the association will follow this luncheon.

Smoker of Dallas Veterans

Dallas physicians who are veterans of the World War will give a smoker at the Scottish Rite Cathedral at 7 p. m., April 19. An invitation has been extended to General Pershing to attend, and arrangements are being made to have the military band from Fort Sam Houston furnish music for the occasion. Dr. R. L. Van Duzen, 405 Live Oak Street, Dallas, is in charge of arrangements.

Louisville Reunion

The alumni of the Louisville medical schools are planning to hold the largest reunion at Dallas, April 21, ever held in connection with an annual session of the American Medical Association. Dr. Irvin Abell (Louisville Medical College '97), president of the Southern Surgical Association and of the Kentucky State Medical Society, will give an address on "The History and Early Development of Medical Education in Kentucky," illustrated with moving pictures and portraits of Kentucky pioneer physicians. There will be a dinner at the Adolphus Hotel at 7 p. m., followed immediately by the entertainment. Every graduate of the Louisville medical schools is urged to be present and is requested to notify Dr. Charles M. Rosser, president of the Texas committee of Louisville graduates, Medical Arts Building, Dallas, Texas. Tickets will be on sale at the alumni window at registration headquarters.

Special Trains from the East

There will be a special train over the Pennsylvania lines, which will leave New York at 4:50 p. m., April 16, arrive in St. Louis at 5 p. m., April 17, leave St. Louis on the "Sunshine Special" of the Missouri Pacific at 6:45 p. m., April 17, and arrive in Dallas at 1:10 p. m., April 18. A delegation from New England will join the New York party at St. Louis.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Gift of Dr. Musgrave.—The council of the California Medical Association has accepted the gift of Dr. William E. Musgrave of 200 shares of stock of *Better Health* for which Dr. Musgrave paid $20,000 in cash. The council expressed its appreciation of this gift, noting that it exceeds any gift heretofore made to the association.

Annual Report of Medical Examiners.—Six hundred and eighty-four applications for licenses of all classes to practice were filed with the California State Board of Medical Examiners during 1925, and 616 certificates of all kinds were issued by the board, of which 293 were to physicians after a written examination and 264 to physicians presenting qualifications from other states. Illinois again sent to California the largest number of successful applications for reciprocity, and New York the second largest. Only thirty-seven California licentiates obtained reciprocity licenses in other states. Certificates were issued to ten drugless practitioners, ten chiropodists and seventeen midwives, all after a written examination; seventeen licentiates were called before the board for hearings on various charges, ten of them being for violations of the narcotic law. Six licenses were revoked, six were placed on probation and five were pending at the time the report was made. Of the written examinations, the report is said to state that the University of California has not had a failure reported in the last sixteen years.

COLORADO

Anniversary of Laënnec.—About 100 members and guests of the Denver Clinical and Pathological Society commemorated the one hundredth anniversary of the death of Laënnec, February 9, at a dinner at the University Club, Denver. Dr. Gerald B. Webb, Colorado Springs, was the principal speaker. Among the guests were Col. Paul C. Hutton; Lieut. Col. Earl H. Bruns; Major William H. Thearle of the U. S. Army Medical Corps; Dr. George A. Boyd, president-elect of the Colorado State Medical Association; Dr. Maurice H. Rees, dean of the University of Colorado School of Medicine, and Dr. Harry J. Corper of the National Jewish Hospital. Dr. Josiah N. Hall is president of the society.

Clinics at Colorado General Hospital.—The faculty of the University of Colorado School of Medicine, Denver, gave a series of clinics at the Colorado General Hospital, March 23-26, to which personal invitations were extended to every practicing physician in the state. There were clinics in surgery and medicine and in the specialties; also demonstrations in biochemistry, physiology, bacteriology and pharmacology, and clinical pathologic conferences. The program was arranged to afford interest to all groups of practitioners, and to be of practical benefit to those in attendance. Physicians of the state were informed that they are welcome at any time to this institution, which the state provided for teaching purposes.

GEORGIA

Georgia Physician in Hall of Fame.—Having the privilege of memorializing in marble her two most distinguished sons, the state of Georgia will place the statue of Dr. Crawford W. Long in Statuary Hall in the Capitol, Washington, D. C., March 30, at 3 p. m., the eighty-fourth anniversary of Dr. Long's discovery of ether anesthesia. The president of the Long Memorial Association, Frank K. Boland, will preside at the ceremonies, and the daughters of Dr. Long will unveil the statue. Chief Justice Richard B. Russell of the supreme court of Georgia will present the statue to the state, and the governor of Georgia, Clifford Walker, will present the statue to the United States. The speech of acceptance will be made by Senator W. J. Harris of Georgia; Dr. Hugh H. Young of Johns Hopkins University Medical School, Baltimore, will give an address on behalf of the medical profession. Joseph Jacobs, D.Sc., a friend and former employee of Dr. Long, will speak on behalf of the pharmaceutical profession, and Senator George Wharton Pepper of Pennsylvania, on behalf of the University of Pennsylvania, from which Dr. Long graduated in medicine. Responses will be made by Dr. Lamartine G. Hardman, representing the Medical Association of Georgia; by Rebecca Latimer Felton, former U. S. senator from Georgia; by Dr. William Hamilton Long, secretary of the Southern Association of Anesthetists, and by Miss Virginia Gibbes, representing the nursing profession. The Long Memorial Association presented the statue, which was made from Georgia marble by the sculptor, John M. Rhind and carved by James K. Watt. Dr. Long died in 1878 while in attendance on a patient, in whose interest his last words were spoken.

IDAHO

Personal.—Dr. John W. Givens has resigned as medical superintendent of the state asylum at Orofino, which position he has held for more than twenty years.——P. A. Surg. Le Grand B. Byington, U. S. Public Health Service, was directed, February 24, to proceed from Washington, D. C., to Shoshone, and to such other points in Idaho and Montana as may be necessary and return, in connection with an outbreak of Rocky Mountain spotted fever.

CHICAGO

Institute of Medicine of Chicago.—Preceding the March 26 meeting of the institute at the City Club, when Dr. Evarts Graham of St. Louis will speak on "New Developments in Our Knowledge of the Gallbladder," there will be an informal dinner at 6:30; members of the Chicago Surgical Society will be guests of the institute at this meeting. Announcements of future meetings of the institute include two lectures by Sir Arthur Newsholme of London, May 10-11, at the University of Chicago, with which the lectures have been arranged conjointly; Prof. Friederich Mueller of Munich, Germany, in October, 1926; Dr. Francis W. Peabody, Boston, October 29, when the third annual joint meeting with the Society of Internal Medicine will be held, and the seventh Pasteur lecture, November 19, by Donald Van Slyke, New York.

Medical Students Y. M. C. A. Dormitory.—Construction has started on a ten story Y. M. C. A. building to be eretced at Congress and Wood streets, for the exclusive use of professional students attending the medical and dental schools in that locality. The building will be of stone to the third story, and of stone and brick from there to the top. The first floor will house the gymnasium, handball courts and shops. The second floor, club rooms, a cafeteria, offices, lounges, lockers and showers; on the remaining floors will be 365 rooms for students. The building will cost $750,000, of which the students subscribed $50,000, and members of the faculties of various schools, $150,000; it will be completed about December, 1926. The chairman of the committee of management is Dr. Channing W. Barrett. The structure is said to be the first of its type to be erected by the Y. M. C. A.; the design is in harmony with the other buildings in the association's expansion program.

IOWA

Dr. Plass Heads Department of Gynecology.—Dr. Everett Dudley Plass of the Henry Ford Hospital, Detroit, has been appointed head of the department of gynecology and obstetrics at the State University of Iowa College of Medicine, Iowa City, to succeed Dr. Frederick H. Falls, who recently resigned, to accept a similar position with the University of Illinois, Chicago.

Smallpox at Council Bluffs.—There had been 224 cases of smallpox reported at Council Bluffs between Sept. 2, 1925, and March 15, 1926, of which 113 cases were reported in February and twenty-six the first half of March; all have been mild cases with no deaths. Many people are being vaccinated, but the cost to the city of quarantine will exceed many times the cost of a general vaccination program which was advised by the city health officer some time ago.

KANSAS

Health Officer Appointed.—Dr. Shubert D. Henry, formerly of Wichita, Kan., assumed the duties of health officer of Kansas City, March 1, succeeding Dr. Louis B. Gloyne, who resigned to return to private practice, after having served the city as health officer since 1919.

Personal.—George E. Coghill, Ph.D., professor of anatomy, University of Kansas, has been appointed to a newly created chair of comparative anatomy at the Wistar Institute, Philadelphia.——Dr. Edgar M. Sutton, Salina, has been appointed county health officer, to succeed Dr. Samuel T. Blades.——Dr. Enoch C. Wickersham, Independence, has been reappointed county health officer for 1926.

KENTUCKY

Society News.—The Fayette County Medical Society gave a dinner, February 9, in honor of its senior members; Dr. Benjamin F. Van Meter was toastmaster; among the speakers were Dr. Irvin Abell, Louisville, president of the state medical association, Dr. Joseph A. Stucky, Dr. Samuel B. Marks and Judge James D. Denny.

Personal.—At a meeting of the new board of health of Henderson, March 4, Dr. George F. Jones was elected president and Dr. James U. Ridley, city health officer; among the other members of the board are Dr. William V. Neel and Dr. Jesse O. Strother.——Dr. John C. Morrison, who succeeded Dr. James M. Hubbard of Paducah last summer as head of the public health work in the city, has resigned.——Dr. Daniel H. Kash of Jackson has taken up his duties as physician to a coal camp at Blue Diamond.

Physical Defects of Freshmen.—An examination of 837 freshmen by the department of hygiene and public health at the University of Kentucky, Lexington, recently, disclosed, it is reported, that none of them were free from physical defects. Among 512 males, there were defects of the nose and throat in 445, and of vision in 236 among 325 women students examined, 271 had defects of the nose and throat,

and 202 defects of vision. Only sixty male students had defective feet; while 101 women students had defective feet, none of them had skin defects; sixteen of the men students had skin defects; forty-two women and sixty-one men had some form of heart disease; only 274 out of the total of 837 had been vaccinated against smallpox within the last five years.

MARYLAND

Influenza Program.—The Baltimore City Medical Society devoted its entire program, March 5, to a discussion of influenza and pneumonia in view of an epidemic of those diseases in Baltimore; among the speakers were Drs. Dean Lewis, Wade H. Frost, Louis P. Hamburger and George W. Mitchell.

Personal.—Of the seven members of the 1876 class of the University of Maryland Medical School, five were present at a reunion to celebrate the fiftieth anniversary of their graduation, February 27, at the Hotel Rennert. Those in attendance were Drs. Wilmer Brinton, Thomas C. Worthington, William E. Wiegand and William H. Marsh, all of Baltimore, and Dr. James F. H. Gorsuch of Fork, Md. Those unable to be present were Dr. Samuel J. Belt, Baltimore, now 82 years of age, and Dr. David W. Smouse, who lives in Des Moines.——Dr. Joseph Goldberger, U. S. Public Health Service, gave an address at the School of Hygiene and Public Health, Johns Hopkins University, Baltimore, March 1, on "Present Status of Our Knowledge of the Etiology of Pellagra."——Dr. John Whitridge Williams, professor of obstetrics, Johns Hopkins University School of Medicine, Baltimore, presided at a meeting of a group of physicians, January 22, which was addressed by Dr. James F. Cooper, of the American Birth Control League, New York, on "Birth Control."——Dr. Daniel S. Fisher has been appointed coroner for the Western district of Baltimore, to succeed Dr. Harry K. Gorsuch, resigned.——Dr. Bernard Philip Herzog has been appointed medical examiner to the board of pension trustees of Baltimore; the other members of the medical staff are Dr. Frank S. Hundley and Dr. Andrew Kunkowski.

MICHIGAN

Society News.—Dr. John K. Ormond of the Henry Ford Hospital, Detroit, addressed the Lenawee County Medical Society, Tecumseh, February 4, on "Diseases of the Kidney, Ureter and Bladder," illustrated with lantern slides.——Dr. John B. Youmans, Ann Arbor, addressed the Calhoun County Medical Society, recently, on "Some Practical Applications of Our Newer Knowledge of the Liver."——Dr. Reuben Peterson of the University of Michigan Medical School addressed the Hillsdale County Medical Society, recently, on "Abnormal Obstetrics."——Dr. Josiah J. Moore, Chicago, addressed the St. Clair County Medical Society, February 4, on "Gallbladder Visualization," illustrated by lantern slides.

Resolution About Laymen Being Health Officers.—The Ingham County Medical Society, Lansing, has adopted a resolution disapproving the address of a member of the American Public Health Association at St. Louis, Oct. 7, 1925, which, it is said, favored a new doctor of public health in every locality where a health officer is needed; it is pointed out that the University of Michigan and the Detroit College of Medicine have inaugurated courses in public health whereby a layman may in a comparatively short time qualify as a doctor of public health and be allowed to practice preventive medicine. The society held the view that all health officers should first be physicians licensed to practice by the board of registration of the state of Michigan.

MINNESOTA

Chiropractors Sentenced.—William F. Wittig and Mathilde C. Andresen, chiropractors of Red Wing, were recently sentenced to thirty days in the Goodhue County jail and fined $50 each for practicing without a license.

University News.—E. F. Burton, Ph.D., department of physics, Toronto University Faculty of Medicine, Toronto, Canada, will lecture at the University of Minnesota, March 30, on "The Physics of the Ultramicroscope: Its Structure and Use, and the Optical Properties of Suspended Particles and Colloidal Cells."

Personal.—Dr. John A. Thabes, Brainerd, has been reappointed a member of the state board of health.——Dr. John T. Bowers has been elected city physician of Thief River Falls, to succeed Dr. Herman W. Froehlich.——Dr. Paul A. O'Leary, Rochester, Minn., has been elected president of the Minnesota Dermatological Society, and Dr. Dale D. Turnacliff, Minneapolis, secretary.

MISSISSIPPI

Governor Signs Antievolution Bill.—Governor Whitfield signed the antievolution bill, March 11, thus enacting a law which prohibits the teaching in state supported schools of the theory that man descended from another form of animal life. The penalty for violation of the law is a fine of from $100 to $500, and revocation of the license of the teacher convicted. This issue is said to have been "injected" into the legislature by organizations outside the state. Within a few minutes after the governor signed the Evans-Hickey bill, a bill had been introduced in the house to repeal the antievolution law.

MISSOURI

License Refused.—Following an investigation, the Hospital and Health Board of Kansas City has refused Dr. Charles O. Ozias a license to conduct a clinic and hospital. Ozias was recently fined $250 for conducting a clinic in Kansas City without a license, it is reported.

Society News.—Dr. John J. R. Macleod, professor of physiology, University of Toronto, Canada, addressed the annual banquet of the Kansas City Academy of Medicine, Kansas City, February 5, on "Some Further Work on Insulin."——The Jackson County Medical Society, Kansas City, will hold a symposium on infantile paralysis, March 30, in which Dr. Frank C. Neff will discuss "The Early Diagnosis and Treatment of Acute Infantile Paralysis," and Dr. Rexford L. Diveley will report on the 1925 epidemic in Kansas City; Dr. Charles S. Williamson, professor and head of the department of medicine, University of Illinois School of Medicine, Chicago, who will be the guest of honor at the fourth annual "president's night," April 6, will speak on "Management of the Simple Anemias."

New Medical School in Kansas City.—A campaign is under way to raise $5,000,000 for a new university in Kansas City to be known as the Lincoln and Lee University. The movement is sponsored largely by the Methodist church, which will elect one half of the members of the board of trustees, and other denominations will elect the remainder. The project is said to be meeting with enthusiasm, particularly among persons interested in the prospect of a school which will have a religious environment. One of the first departments to be established will be the medical department; the trustees contemplate breaking ground this fall, and the beginning of class work one year from that time. The president of the board of trustees is Bishop E. L. Waldorf of the Kansas City District and the Methodist Episcopal church.

NEW YORK

Gift for Study of Children.—An anonymous friend of Vassar College has given that institution $75,000 to erect a demonstration laboratory in connection with the course in eugenics. The laboratory will be used for the scientific study of the care of children from infancy to school age.

Dr. McKay Resigns.—Dr. Florence L. McKay, director of the division of maternity, infancy and child hygiene, state department of health, since 1921, has tendered her resignation, effective at once, on account of ill health, and Dr. Elizabeth M. Gardiner, associate director of the division, has been appointed to succeed Dr. McKay. Dr. Gardiner has been in the state health department for about two years and a half, and formerly was director of the Child Welfare Division of the Rhode Island State Department of Health.

New York City

Dr. Welch Honored.—The Association of the Alumni of the College of Physicians and Surgeons in New York gave a dinner, March 19, at the Waldorf-Astoria, in honor of Dr. William H. Welch, director, School of Hygiene and Public Health, Johns Hopkins University, Baltimore; Dr. Welch spoke on "Reminiscences of the College of Physicians and Surgeons in the Seventies."

"Prescription Bootlegging." — Warrants were issued, March 17, for the arrest of a number of physicians, druggists and distillery salesmen, who were charged with "prescription bootlegging" of a new form in which they are said to have sold their prescription books, signed in blank, to distillery salesmen, who, in turn, sold them to druggists. Testimony obtained after a three months investigation will be presented to the grand jury, it is reported, with a view to indicting

a total of about 100 "doctors." A number of those accused have denied the charge.

"Blizzard Class" Reunion.—The thirty-eighth anniversary of the "blizzard class" of Bellevue Hospital Medical College will be celebrated, April 10, at the Hotel McAlpin, 7 p. m. The class, which will again be the guests of their fellow alumnus Dr. David Hunter McAlpin, graduated, March 12, 1888, the date of the memorable blizzard; seventy-five of the 144 graduates are still living; any one of them who has failed to receive an invitation and desires to attend should address the acting secretary, Dr. S. Adolphus Knopf, 16 West Ninety-Fifth Street, New York City.

Society News.—Dr. Richard W. Westbrook addressed the Medical Society of the County of Kings, March 16, on "Blair Bell's Treatment of Cancer with Colloidal Leads"; this society recently received a request for 500 copies of the picture of its new library building from another society, which is planning to build a home.——Dr. George H. Fox, honorary president of the American Dermatological Association, addressed a joint meeting of the West Side Clinical Society and the Washington Heights Medical Society, March 11.——Dr. Louis I. Harris, commissioner of health, addressed the annual meeting of the Mount Sinai Society, March 21, on "The Hospital and Public Health."——Dr. Paul D. White, Boston, addressed the Medical Society of the County of New York, March 22, on "Endocarditis in Earliest Childhood."——Dr. Charles L. Scudder, Boston, addressed the New York Academy of Medicine, March 18, on "When Is Operative Treatment Justified in Fractures of the Long Bones?" and Dr. Joseph A. Blake on "Difficulties in Reduction of Fractures in Long Bones and the Principles of Treatment"; Dr. James M. Hitzrot on "The Cause of Nonunion," and Dr. William Darrach on "Fractures in the Aged, Their Prognosis and Treatment."——Dr. Dennett L. Richardson, director, City Hospital, Providence, R. I., addressed the Yorkville Medical Society, March 15, on "Care and Hospitalization of Infectious Diseases."—Dr. Dean Lewis, professor of surgery, Johns Hopkins University Medical School, Baltimore, addressed the Brooklyn Surgical Society, March 4, on "Sarcoma of Bone," and was the guest of honor at a dinner and reception.——Dr. Harry E. Stewart, New Haven, Conn., was elected president of the New York Electrotherapeutic Society, March 3, and Dr. Charles R. Brooke, Newark, N. J., secretary.

OHIO

Another "College President" Indicted.—Solomon L. Long, head of the "College of Anatomical Science" at Cleveland, was indicted, March 9, by the county grand jury, having been charged, following an investigation by the state medical board, it is reported, with issuing a "false medical diploma," conferring the degree of "doctor of anatomical science." Prior to coming to Cleveland, Long is said to have conducted a school in Fort Wayne, Ind.

Impostor's Patient Dies of Lead Poisoning.—The state medical board of Ohio recently caused the arrest of William H. Young at Gallipolis, who, it is reported, had been treating a patient for varicose ulcers by means of an ointment and plasters that contained lead. The patient, who was eventually removed to a hospital, died, and the cause given in the death certificate was lead poisoning. Young is said to have obtained about $1,500 from the family. He is not a practitioner of medicine and has no certificate to practice in Ohio; he was bound over to the grand jury on a charge of manslaughter.

PENNSYLVANIA

Typhoid Fever Epidemic at New Milford.—Fifty cases of typhoid fever and three deaths were reported at New Milford, March 12. The American Red Cross had sent ten nurses to the village (the population is about 600) and other nurses were obtained from Scranton, and from Binghamton, N. Y. With one exception, the victims are under 30 years of age. The water supply is said to account for the epidemic.

Endowment for Henry Phipps Institute.—The trustees of the University of Pennsylvania have accepted the offer of Mr. and Mrs. Henry Phipps, New York, to assist in creating an endowment for the Henry Phipps Institute by which they will give $500,000 on condition that the university raises a like amount before Jan. 1, 1927. On fulfilment of this condition, all buildings and equipment belonging to the institute will be deeded to the university. Further plans by the university are for the gradual accumulation of funds allotted to the institute in its campaign to raise $45,000,000 over a term of fifteen years, so that when the campaign is successfully completed, the Phipps Institute will have an endowment of $2,300,000. The institute was placed under the care of the University of Pennsylvania in 1910, Mr. Phipps supplying the funds to maintain the work until 1919, and partly since that time in conjunction with the university, the Carnegie Corporation and the Welfare Federation of Philadelphia. While the institute was founded for the study, treatment and prevention of tuberculosis, provision is made in the plan for endowment that when further study of tuberculosis is no longer pressing, the income of the endowment may be used for the study of other diseases. The directors of the institute now are Drs. Charles J. Hatfield, Eugene L. Opie and Henry R. M. Landis. There has never been an endowment for the Henry Phipps Institute.

Philadelphia

Personal.—Dr. George A. Ulrich has been appointed chief visiting obstetrician to the Northwestern General Hospital.——At the eighteenth annual business meeting of the Pennsylvania Conference of Social Welfare, Dr. Isaac M. Rubinow was elected president for 1927.

Society Dedicates New Home.—The Philadelphia County Medical Society will dedicate its new home, April 21, with exercises at 2 o'clock, and final dedicatory exercises at 8:30 p. m. The next evening at 8:30 will be ladies' night, when there will be a reception, musicale and dance; the building will be open for inspection both days of the celebration.

RHODE ISLAND

Hospital News.—The new $150,000 South County Hospital, Wakefield, was recently dedicated. Facilities have been provided for twenty-two beds at present, and the building will accommodate almost twice that number of patients.

Society News.—Dr. James F. Cooper, New York, of the American Birth Control League, addressed the Washington County Medical Society, Westerly, recently on "The Technic of Contraception."——Alonzo R. Williams, Esq., Providence, addressed the Rhode Island Medico-Legal Society, recently, on "The Medical Man on the Witness Stand."——The program of the Providence Medical Association February meeting was devoted to medical education; addresses were made by Dr. Samuel R. Meaker, Harvard University, on "The Postgraduate Medical Education"; Dr. Alexander S. Begg, dean and Waterhouse professor of anatomy, Boston University School of Medicine, on "Undergraduate Medical Education," and Frank G. Wren, A.M., of Tufts College, Medford, on "Premedical Education."——Dr. Jeffrey J. Walsh, Providence, has been elected president of the Rhode Island Ophthalmological Society.

WASHINGTON

Sanipractors and the Referendum.—John E. Lydon, former president of the defunct American University of Sanipractic of Seattle, is circulating a petition to obtain signatures to file with the secretary of state, for a referendum on a broader recognition of sanipractic in Washington at the November election. The sanipractic bill was defeated recently in the legislature. Should it become a law by referendum, the licenses of about ninety sanipractors, which were revoked because of fraud in connection with the diploma mill exposé, would be restored; there would be a separate board of examiners for sanipractors, and the examinations would be conducted by the secretary of state instead of by the director of licenses who now conducts such examinations. It may be recalled that John E. Lydon's "university business" grew so rapidly and the complaints of selling diplomas became so numerous that the state instituted proceedings to dissolve his school. The court ordered the university closed. A law was then passed which made it possible to revoke the licenses of about ninety sanipractors which were said to be fraudulently obtained. Lydon recently presented two bills to the legislature, and both of them received unfavorable reports in committee. He is now trying to obtain a referendum.

WISCONSIN

Personal.—Dr. and Mrs. Joseph Schneider, Milwaukee, gave the Milwaukee University School $50,000 in February to be applied on the new building.——Dr. Robert D. Millard has taken up postgraduate work at the Wisconsin General Hospital, Madison, following three years spent in Honolulu.——Dr. Stephen Cahana and Felix J. Baur have been appointed fire department physicians of Milwaukee.——Dr. Otho A. Fiedler, Sheboygan, has been reelected president of the state board of health, and Dr. Cornelius A. Harper relected as state health officer.

GENERAL

Fund to Encourage Pharmaceutic Research.—The American Pharmaceutical Association has available a fund of $450, which will be expended after October 1 for the encouragement of research. Investigators who desire financial aid in their work should communicate with the chairman of the research committee, H. V. Arny, 115 West Sixty-Eighth Street, New York, before June 1, giving their record and outlining the line of work for which the grant is desired.

Fatalities in Coal Mines.—According to the bureau of mines, 318 men lost their lives in January on account of accidents in coal mines in the United States. This unusually large total was due to four major explosions, the most disastrous one being that of Wilburton, Okla., January 13, in which ninety-one men were killed. Another occurred at Farmville, W. Va., January 14, killing nineteen men; another at Frankfort, Ill., January 29, killing five men, and another at Helena, Ala., January 29, killing twenty-seven men. There were more than 1,000 men in the mine at Frankfort when the explosion occurred, and the death of only five is attributed to the use of rock dust, which localized the effects of the blast.

New County Society Presidents.—The following physicians have recently been elected president of the county medical society indicated:

Dr. John T. Anderson, Warrensburg, Mo., Johnson County Medical Society.
Dr. Louis Bagby, Vinita, Okla., Craig County Medical Society.
Dr. Charles G. Baird, Beatrice, Neb., Gage County Medical Society.
Dr. Alonzo W. Benton, Neosho, Mo., Newton County Medical Society.
Dr. William W. Bolster, Lewiston, Me., Androscoggin County Medical Society.
Dr. Edward T. Bramlitt, Malvern, Ark., Hot Spring County Medical Society.
Dr. Thad Cothern, Jonesboro, Ark., Craighead County Medical Society.
Dr. Robert L. Crawford, Locust Grove, Ga., Henry County Medical Society.
Dr. Alton W. Davis, Warrenton, Ga., Warren County Medical Society.
Dr. L. Lea Doane, Butler, Pa., Butler County Medical Society.
Dr. William J. Durant, Rolla, Mo., Phelps County Medical Society.
Dr. John N. Ellison, Portsmouth, Ohio, Sciota County Medical Society.
Dr. William M. Fambrough, Bostwick, Ga., Morgan County Medical Society.
Dr. John E. Ferringer, Stoneboro, Pa., Mercer County Medical Society.
Dr. Claude P. Fordyce, Falls City, Neb., Richardson County Medical Society.
Dr. Charles E. Garratt, Hot Springs National Park, Ark., Garland-Hot Springs Counties Medical Society.
Dr. Arthur G. Harrison, Searcy, Ark., White County Medical Society.
Dr. George L. Henderson, Conway, Ark., Faulkner County Medical Society.
Dr. Frederick M. Houghtaling, Sandusky, Ohio, Erie County Medical Society.
Dr. William E. Johnson, Belle, Mo., Gasconade-Maries-Osage County Medical Society.
Dr. Buford O. Joiner, Tennille, Ga., Washington County Medical Society.
Dr. William C. McCarver, Vidette, Ga., Burke County Medical Society.
Dr. Walter A. Miller, Arabi, Ga., Crisp County Medical Society.
Dr. West Montgomery, Mentor, Ohio, Lake County Medical Society.
Dr. Mass R. Noland, Moberly, Mo., Randolph County Medical Society.
Dr. Clarence A. Peaslee, Bath, Me., Sagadahoc County Medical Society.
Dr. John W. Pickel, Barnhart, Mo., Jefferson County Medical Society.
Dr. Mandelle Y. Pope, Monticello, Ark., Drew County Medical Society.
Dr. Thomas E. Presley, Roswell, N. M., Chaves County Medical Society.
Dr. Edward E. Robinson, Adrian, Mo., Bates County Medical Society.
Dr. James P. Schureman, New Brunswick, N. J., Middlesex County Medical Society.
Dr. Joseph W. Shaw, Cushocton, Ohio, Cushocton County Medical Society.
Dr. Foote R. Singleton, Slidell, La., St. Tammany Parish Medical Society.
Dr. Mathew W. Spearman, Chickamauga, Ga., Walker County Medical Society.
Dr. Charles W. Stone, Cleveland, Ohio, Cuyahoga County Medical Society.
Dr. Otis R. Thompson, Macon, Ga., Bibb County Medical Society.
Dr. Hiram D. Vaughter, Byers, Texas, Clay County Medical Society.
Dr. Frank M. Virtue, Sulphur Springs, Ohio, Crawford County Medical Society.
Dr. Daphney E. White, Eldorado, Ark., Union County Medical Society.
Dr. William E. Wofford, Cartersville, Ga., Bartow County Medical Society.
Dr. Rennie Wright, New Braunfels, Texas, Comal County Medical Society.

Bills to Standardize Clinical Thermometers.—Prospects for legislation to standardize clinical thermometers at the present session of Congress are uncertain because proponents of this legislation do not agree on the details of pending bills. A hearing was held by the Senate committee on interstate commerce, March 4, on two bills introduced by Senator Royal S. Copeland, New York, to regulate interstate commerce in the traffic of clinical thermometers. The first bill provides that all thermometers sold in interstate commerce should be tested by the bureau of standards at Washington. The objections to this measure are that it imposes undue hardship on reputable manufacturers of clinical thermometers and would increase the cost of thermometers, as a reasonable fee would be paid by the manufacturer to the government for such tests. The manufacturers would have to bear, too, the expense and losses incident to shipment to and from the government testing laboratories. The second bill would regulate the standard of clinical thermometers by requiring manufacturers to secure from the secretary of commerce licenses or permits, which would be issued after the inspection of the plants and factories to ascertain "the ability of the manufacturers to promote and to promulgate the rules and regulations" fixed by the bill. Dr. William C. Woodward, Chicago, secretary, Bureau of Legal Medicine and Legislation of the American Medical Association, stated to the committee that that organization favored the principles of the bill providing for the licensing system; he did not unqualifiedly approve the measure, however, indicating that it should be redrafted to overcome obscurities apparent in its phraseology; among others who made statements before the committee were Dr. W. P. Morrill, Washington, D. C., representing the American Hospital Association; Mr. G. P. Faichney of the Faichney Instrument Corporation, Watertown, N. Y., and Mr. M. W. Becton of the Becton-Dickinson Company, Rutherford, N. Y. It was the opinion of all witnesses that methods should be devised by legislation to provide that clinical thermometers be of the highest quality. It was clear, however, from the testimony presented that there is a wide difference of opinion as to the best methods to bring about such results. The committee adjourned with the feeling that no legislation is likely to be enacted until medical authorities and manufacturers can reach a general agreement on definite methods of legislation.

PHILIPPINE ISLANDS

Personal.—Major Arthur Parker Hitchens, M. C., U. S. Army, a member of the army medical reserve board in Manila, has been detailed as technical adviser to the governor general in matters of public health.

Society News.—The Philippine Islands Medical Association has petitioned the University of the Philippines to renew the grant of 600 pesos made to the association's journal, and, if possible, to make it of permanent character; the association at its last annual business meeting in Manila voted to request the legislature to appropriate funds for the control and eradication of trachoma. The association voted at the business meeting in Manila in December to table the report of the special committee appointed to study the advisability of securing the independence of the Philippine Islands' Medical Association.

FOREIGN

Scientific Congresses in Germany.—The annual meeting of the German Association for Internal Medicine is to be held at Wiesbaden, April 12-15, with the usual annex exhibition. The topics appointed for discussion are "Neurosyphilis"; "The Blood as Mirror of Somatic Processes," and "Asthma." It is to be followed by the first general medical congress on psychotherapy. The German Surgical Congress convenes at Berlin, April 7-10, and is to be followed by the Roentgen Congress, with Dr. M. Haudek, Vienna, in the chair. The themes for discussion are "Postoperative Irradiation," "Visualization of the Gallbladder," and "Dosimetry of the Roentgen Rays."

British Medical Association Meeting.—The ninety-fourth annual meeting of the British Medical Association will be at Nottingham in July under the presidency of Dr. Frederick G. Thomson; July 16, the annual representative meeting will begin and continue the three following week days. The representative dinner will take place at the Victoria Hotel, July 16; the statutory annual general meeting, July 20; the annual dinner of the association, July 22; the conference of honorary sections, July 21; the official religious service at St. Mary's Church, July 20; a popular lecture will be delivered by Prof. Leonard Hill in the evening, July 21; and July 24 will be given up to excursions to places of interest in the neighborhood. The incoming president, Mr. Robert G. Hogarth, will deliver his address, July 20. The scientific sections will meet from 10 a. m. to 1 p. m., July 21-23.

CORRECTIONS

Philadelphia Neurological Society.—The new officers noted in THE JOURNAL, March 20, under Philadelphia Society News were elected by the Philadelphia Neurological Society instead of the Philadelphia Urological Society.

Dr. Mary Putnam is Not Dead.—The notice of the death of Dr. Mary Putnam, 124 East Fifty-Fifth Street, New York, published in THE JOURNAL, March 20, was an error, and Dr. Mary Putnam is alive and well. It was Dr. Mary S. Putnam of New York and formerly of Battle Creek, who died February 16.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Feb. 26, 1926.

The Causation of Cancer

"An Investigation into the Statistics of Cancer in Different Trades and Professions" has been published by the Medical Research Council. The inquiry was carried out by Dr. M. Young and Mr. W. T. Russell, working in collaboration with Dr. John Brownlee (director of statistics of the Medical Research Council) and Dr. E. L. Collis. They examined the records of more than 46,000 cases of death from cancer in 160 different occupations, and state that this is "a survey of the relation of cancer to occupation with a detail beyond any hitherto attempted." The group of open-air workers, including agricultural laborers, seamen in the merchant service, dock laborers and railwaymen, was found well in the front in excess of cancer of the lip. Among these, cancer of the lip is from 200 to 300 per cent in excess of what might be expected. In the next degree, having about 60 to 100 per cent in excess of the normal amount of lip cancer, are masons, laborers in general, farmers and graziers. These open-air workers have in common unrestricted opportunities for indulging in smoking, and the probability exists that twelve or fourteen years ago cheap clay pipes were favored. Coal miners working below ground, where smoking is prohibited, contrast with colliery workers above ground in not suffering any excess of lip cancer. The mortality from cancer of the lip is thirteen times and of the tongue eleven times higher among men than among women.

Alcohol appears as a predisposing cause of cancer of the tongue and esophagus. Among the groups in which cancer of this part is in excess of the average are brewers, porters, dock and wharf laborers, costermongers, hawkers and butchers, "who are supposed to consume an excessive amount of alcohol." Occupations with unusually low incidence of cancer of the tongue do not include any group with a high death rate from alcoholic diseases. But excess of cancer of the tongue is also found among slaters, tilers, cutlers, printers and plumbers; and it is said that the habit of drinking very hot tea, boiled over a fire for the mid-day meal, may furnish an explanation. Among men who have an excessive amount of cancer of the esophagus are those engaged in the liquor trade: brewers, publicans, inn and hotel keepers, beer bottlers and cellarmen, as well as commercial travelers, coachmen and cabmen, horsekeepers and grooms, and others who are supposed to consume an excessive amount of alcohol. There is thus very suggestive, if not practically conclusive, evidence that excessive consumption of alcohol predisposes to cancer of the esophagus.

The stomach is the most frequent site of cancer in men, and the disease occurs in excess among miners, quarriers, and in certain occupations in the manufacture of wool and cotton. Cancer of the larynx is high in musicians, army officers and law clerks, while cancer of the bowel is significantly above the normal in barristers, solicitors, bankers, bank clerks, teachers, commercial clerks, clergymen and others of sedentary occupation.

Medical Officialdom: Eleven Physicians to One Family

Eleven official physicians for one family is a possibility under the present system of public health services, according to the British Medical Association. A memorandum of the evidence to be given to the royal commission on local government says that the chaos and wastefulness of health administration are made worse with every act of parliament that is passed dealing with these matters. In the extreme but possible example of a poor family with one mentally defective child living in a noncounty borough, the following medical officers might be interested at the same time: the county medical officer, with his tuberculosis officer and mental deficiency officer; the borough medical officer; the maternity and child-welfare officer; the school medical officer or officers of possibly two education authorities (county and borough); the insurance practitioner or practitioners; the poor law medical officer or officers; the special physician for the treatment of venereal disease, and a special smallpox officer.

The mother of such a family will usually be attended at childbirth by a midwife, who in an emergency must call on the services of a physician (either private or the poor law medical officer). Notification that this has been done must be made to the medical officer of the county; the birth must be notified to the medical officer of health of the borough, and registered with the registrar. The house will be visited by the inspector of midwives, by the sanitary inspector, by the health visitor, by the vaccination officer, by the infant life protection visitor, by the school nurse, by a visitor under the mental deficiency act, possibly also by the relieving officer and by semiofficial or unofficial but kindly persons (as, for example, district nurses) interested in the health and well being of its inmates. When a poor patient has to go to a hospital or elsewhere there is a similar chaotic and expensive state of affairs. The many institutions are established and conducted as independent units unrelated to one another. The remedy suggested is the creation of new large health administrative areas, each controlled by a local health authority with full administrative powers, and a medical committee, elected by local physicians, to appoint representatives on the local health committee.

Military Hospital Reserve

The reorganization of the "home hospitals reserve" under the designation of the "military hospitals reserve" has been approved by the war office, and the qualifications for enrolment are stated in an army order. This reserve will consist of warrant and noncommissioned officers and privates only, with an authorized establishment of 2,000. The functions of the reserve will be (*a*) to staff the military hospitals and other establishments maintained by the regular medical services on the mobilization and withdrawal of the regular royal army medical corps for duty in the field; and (*b*) to provide reinforcements for the medical units of the expeditionary force overseas after mobilization. Membership will be entirely voluntary, and the personnel will be provided by the St. John ambulance brigade for England and Wales and northern Ireland and the St. Andrew's ambulance corps for Scotland. The age limits for enrolment will be from 19 to 40 years, and no member will be permitted to remain in the reserve after he has reached the age of 45 years. Every applicant must be in possession of the first-aid certificate recognized or granted by the St. John ambulance association, and, in addition, obtain a nursing certificate recognized by those bodies within a period of twelve months after enrolment. A proportion of the total establishment of each rank in the reserve will, in annual rotation, receive training for eight days under military arrangements. Training will be undergone in a military hospital or other military medical establishment, and as far as possible a member will be detailed for this purpose to the hospital to which he would be posted on mobilization.

Fewer Women in Medicine

Lord Sands, who presided at the annual meeting of the Carnegie trust at the universities bureau, said that although since the immediate postwar years there had been a great increase in the numbers of students in arts, as a result of the increased remuneration for teachers, in science and medi-

cine the boom of 1920 had moved to the opposite extreme in the case of women students, for there had been a considerable measure of disillusion in regard to postwar expectations of openings for women in these professions. In medicine the number of women students was 484 in 1920, whereas the number was 101 in 1925. There was apparently a further fall this year.

The Proposed Irish Free State Medical Register

The question of a separate medical register for the Irish free state has been discussed in previous letters. Mr. R. C. B. Maunsell, president of the Royal College of Surgeons in Ireland, announced at the annual meeting of the Incorporated Orthopaedic Hospital in Dublin that, Dec. 21, 1925, three physicians were appointed as a subcommittee to discuss proposals with the free state government for a permanent arrangement with the general medical council, but since that date they had not been approached or consulted. Meanwhile, arrangements had been made for a continuance of the present system until the end of the present year, but the absence of a permanent settlement was driving medical students out of the country, and the Rockefeller Foundation had decided to break off negotiations with the free state medical profession concerning a substantial grant of money for the amalgamation of at least five Dublin hospitals.

Deaths from Septicemia Contracted in Performing Postmortem Examinations

The Cambridge Medical School has suffered the loss of a brilliant young teacher under circumstances that recall the death in January of Miss C. Iris Fox, senior assistant pathologist at the Royal Free Hospital. She died from septicemia contracted during a postmortem examination. That was also the cause of the death of Dr. M. B. R. Swann, fellow of Caius College at Cambridge, and university demonstrator in pathology.

Birth Control in Parliament

In the house of commons, Mr. Thurtle, a labor member, asked leave to present a bill to authorize local authorities to incur expenditure, when deemed expedient, in conveying knowledge of methods of birth control to married women who desired it. His purpose was to make known to very poor women information which would enable them to restrict their families, such as was at present utilized by wealthier women. Year after year the falling off in the birth rate became more and more marked in the upper and middle classes, while in the poorer classes it was almost stationary. In districts where overcrowding was most rampant and poverty most acute, there was a very high birth rate. We were spending money in broadcasting information about sanitation, personal hygiene, diet, tuberculosis and venereal disease, solely on the ground of maintaining public health, and there was not a phase in the work that was not rendered more difficult by women in the poorest districts having larger families than was good for themselves or for the state.

Another labor member, Rev. J. Barr, opposed the motion. The ignorance of poor women on the subject which the bill dealt with was, he said, greatly exaggerated. He desired that the very best medical information and skill should be brought to the doors of the very poor, but that was quite different from entering on a national policy of birth control and propaganda. Economically, it was a policy of despair. He believed that a bountiful creator had provided ample resources for all if there was wise production and just distribution. Moral instincts and religious prejudices—call them what they would—were, after all, the purest, finest and most potent influences in the uplift of mankind. In such questions they were as sure a guide as science itself, and if we chose to defy them we did so at our own peril and the peril of the state. The bill was rejected by 187 votes to 81.

PARIS

(From Our Regular Correspondent)

Feb. 16, 1926.

Functions of Region About Infundibulum and Tuber Cinereum, and Its Relation to Pituitary Body

Gustave Roussy, to whom we are indebted, along with Camus, for important researches on the functions of the infundibulotuberal region, contributes an excellent article on the subject in a recent number of the *Annales de médecine*. Pierre Marie was the first (in describing acromegaly) to call attention to the rôle of the pituitary body. The history of the gland may be divided into two main periods: First, the physiologic importance of the pituitary body was established experimentally by Harvey Cushing, Bield and Marañon. Since the researches of those authors, we speak of syndromes of the anterior lobe and syndromes of the posterior lobe, and the hypophysis has occupied a place of first rank in the physiology of the endocrine glands. Second, beginning in 1911 with the researches of Aschner, Camus and Roussy, there has been a tendency to limit the number of functions attributed to the pituitary body, or, more particularly, to the nervous lobe, and to attach the functions thus dispossessed to the series of nuclei in the gray substance of the floor of the third ventricle.

The experimental data on which Camus and Roussy based their conclusions are given in detail in their communication presented at the International Congress of Neurology held in 1922. In the course of their researches they experimented with 149 dogs and forty-six cats. In some instances they removed the hypophysis by the parietal or palatine route; in other cases they induced lesions in the infundibulum and tuber cinereum by piercing the palatine velum with a red-hot drill. One primary fact brought out by the experiments was that, contrary to the view held by other authors, the hypophysis is not indispensable to life. It is true that many animals operated on die, but mere puncture of the region of the infundibulum and tuber cinereum, with the hypophysis left intact, is just as fatal. Furthermore, several animals survived for a long time the complete removal of the hypophysis as verified at necropsy.

Harvey Cushing was the first to call attention to the polyuria resulting from operations on the hypophysis, and particularly on the posterior lobe. In 1913, Camus and Roussy showed that polyuria could be caused by wounding the region of the infundibulum and tuber cinereum alone. In operations for the extirpation of the hypophysis, polyuria is occasionally observed, but only when, during the operation, a lesion of the tuber cinereum region is effected. If the tuberal region is injured, while the hypophysis remains intact, polyuria is always induced, sometimes of a transient character, and sometimes more or less permanent, amounting thus to diabetes insipidus. Studies seem to indicate that the injured region forms part of a regulatory mechanism controlling micturition. Sometimes, polyuria and polydipsia are concomitant; at other times, polyuria is observed without polydipsia. A lesion of the base of the brain never causes polyuria in young animals, which would seem to indicate that the centers concerned are not sufficiently developed in young animals. Experimental polyuria sometimes amounts to from four to six times the normal quantity. Sometimes it occurs the first day and, in other cases, from the fourth to the tenth day.

In the experiments of Camus and Roussy, experimental glycosuria, which to some investigators has seemed an essention finding (Aschner), was rarely found and, when it did occur, it was of a transient character. Its occurrence, however, indicates a different regulatory mechanism for the metabolism of carbohydrates, not in the posterior lobe of the

hypophysis but in the floor of the third ventricle. Removal of the hypophysis, when accomplished without injuring the base of the brain, does not cause atrophy of the genitalia nor modify their functions. However, with certain experimental lesions of the base of the brain, the authors observed genital atrophy in dogs, or, at least an arrest of development and suppression of libido. In several instances, following experimental lesions of the base of the brain, the authors noted undue increase of adipose tissue. Such obesity is sometimes sudden and marked. Genital atrophy associated with obesity constitutes the classic syndrome described by Babinski and Froehlich. The syndrome may be combined with diabetes insipidus and be of a permanent character, but never did the mere removal of the hypophysis produce such manifestations.

For some time it has been admitted that injection of pituitary extract will induce polyuria (Schäfer and Magnus, 1901), the "polyuric substance" being contained in the posterior lobe. The substance, coursing through the blood, acts directly on the secretory renal cells, independent of any vasomotor action.

Removal of the posterior lobe of the hypophysis causes no appreciable injury. Furthermore, Camus and Roussy observed experimentally that occasionally injection of pituitary extract, instead of stimulating, may depress micturition. The selective rôle of pituitary extracts remains therefore to be demonstrated. The effect of experimental lesions of the base of the brain on the general development of the animal is not fully established as yet. Development seems to be a function of the anterior lobe of the hypophysis, for the action of that lobe on the development of the skeleton appears to be great.

Microscopic study of experimental specimens by Camus and Roussy enabled them to affirm with still greater confidence that the polyuric syndrome is not induced by a hypophysial lesion but by a superficial lesion of the region of the tuber cinereum. Such lesions affect the nuclei of the tuber cinereum, chiefly in their middle and anterior portions.

The authors have not been able as yet to localize definitely the centers which, when injured, cause glycosuria and adiposogenital disorders. In recent years, Camus and Legrand have again been studying the question of the glycosuric center by experimenting on rabbits. From their researches, they conclude that experimental glycosuria in the rabbit, which is irregular, usually tardy in appearance and sometimes prolonged, is produced by a lesion of the paraventricular nucleus located on each side of the wall of the third ventricle within the anterior pillar of the trigon. A number of anatomic and clinical observations have thrown light on the experimental questions. They have observed, for example, several cases of polyuric syndromes following inflammatory or neoplasic processes at the base of the brain, while the hypophysis remained intact (syphilitic or tuberculous meningitis, epidemic encephalitis or possibly traumatism).

The researches described have tended to dispossess the hypophysis of some of its supposed functions and to bestow them on the tuber cinereum. The rôle of the anterior lobe in the growth of the skeleton, and in dwarfism and gigantism, remains incontestable. Of late, researches have been made on the mechanism of experimental polyuria. It has been shown that polyuria occurs even after denervation of the kidney. The nervous system, therefore, has nothing to do with the production of experimental polyuria.

Researches have been made to discover whether substances circulating in the blood might cause the phenomenon. It has been observed (Bailey and Bremer) that if a polyuric animal is given an extra amount of sodium chloride in its food, the polyuria is much more marked than otherwise. That is especially true of polyuria following a lesion of the tuber cinereum.

Camus and Gournay have endeavored to produce polyuria in normal dogs by injecting into them the blood or urine of polyuric animals, or even by transfusing into them, by cross circulation, the blood of polyuric animals, but the experiments gave only negative results. The same authors have observed also that, while all the other substances eliminated in the polyuric urines were merely diluted, the phosphates and the purine bases were considerably increased, sometimes in the proportion of 30 to 1. The authors then injected purine bases (guanine, adenine, hypoxanthine) into normal dogs subcutaneously or intravenously, thereby inducing, according to the amount injected, either a transient polyuria or diabetes insipidus of long duration. Their experiments indicate that modifications in the elimination of decomposition products of nucleoproteins may explain the mechanism of experimental diabetes insipidus. Such an assumption meets with objections, and the question must be studied further.

Researches of great interest have recently been carried out in Nancy by Professor Collin on the histophysiology of the hypophysial secretion. His researches tend to show that the hypophysis exerts an influence on the function and nutrition of important centers located at the base of the brain. Collin has shown also that the colloid that exists in the anterior lobe, in the pars intermedia, and in the interstitial tissue of the posterior lobe may be traced along the wall of the infundibulum up to the immediate vicinity of the nerve cells of the tuber cinereum. We may conclude from that fact that the "neuro-endocrine" secretion plays a very important part in the functioning of the centers found to exist at the base of the brain.

The Medical Examination of Railway Employees

Medical examination of railway employees was recently discussed before the Academy of Medicine. Professor Guillain emphasized the necessity of examinations at intervals of five years for young persons and of three years for elderly employees. Especially neuropsychiatric and cardiologic examinations should be more frequent. Employees whose duties affect the public safety—particularly locomotive engineers—should undergo ophthalmologic examination every two years. Engineers subject to alcoholism should be dismissed at once.

Professor de Lapersonne pointed out that among railway companies there was no uniformity in ophthalmologic examination and that the examination itself left much to be desired. Examination of vision should be very precise and should include color tests. The best method of examining an engineer would seem to be while performing his duties on his engine. When it is impossible to examine an engineer actually on duty, apparatus could be employed which would simulate actual conditions. Promptness in recognizing signals is an important factor, for an engineer may have to react to 200 signals on a 100 kilometer run, while going 80 kilometers an hour.

Functional examination of the pupils is very important. Some railway systems have only one ophthalmologist, to whom only doubtful cases are submitted. The ordinary examinations are made by the physicians of the companies, who, while they may be competent practitioners, have not the skill of specialists.

M. Guillain read a letter from the federation of railway workers which pointed out the financial straits to which dismissal would reduce them. The academy declared that their sole duty was to recognize diseases which might cause accidents.

RIO DE JANEIRO

(From Our Regular Correspondent)

Feb. 15, 1926.

Hemilaryngectomy

Dr. Souza Mendes recently reported to the Medical and Surgical Society a case of hemilaryngectomy, the first time this operation has been performed in Brazil. The patient, aged 56, had for more than twenty years a masked form of goiter, and suffered from a prickle cell carcinoma in the left vocal cord. Gluck and Soerensen's technic was used, with local anesthesia. Healing was by first intention, and the patient was discharged on the twelfth day following the operation. Dr. Souza Mendes discussed incidentally the excellent results secured by him and Dr. D. de Sanson in several total laryngectomies. He explained the successful outcome and benign course in such cases through the great humidity and high temperature in Rio. These seem to block rather effectively postoperative pneumonia, so frequent in Europe in such cases.

Progressive Muscular Atrophy

Prof. Henrique Roxo exhibited before the Society of Neurology and Legal Medicine a case of progressive muscular atrophy with mental degeneration. Since infancy there had been a perverse tendency, which toward puberty took the form of sexual perversion. After suffering four years ago from headaches, fever and convulsions, muscular changes developed, with atrophy of the thenar and hypothenar prominences and claw hand in the right upper extremity. There is also marked atrophy in the muscles of the forearm, arm and shoulder. The opposite arm shows decreased thickness and energy, but the forearm and hand have remained so far normal. The right lower member is completely atrophied, but the left leg is perfectly normal. Sensation seems normal; there is weakening of the tendon reflexes; there is lack of response to faradic excitation, but a positive galvanic reaction; Nonne's test is negative. Roxo contrasted the features of infantile paralysis and Duchenne-Aran's progressive muscular atrophy. His patient has the peculiarity that while the atrophy began typically enough in the hand in one side, it has started in the upper arm in the other extremity. The type seems also uncommon, because of the presence of degeneration.

Industrial Sanitation

In discussing the subject of industrial medicine before the Brazilian Society of Public Health, Dr. J. de Barros Barreto referred especially to American methods and practices, describing his observations in a number of workshops visited by him in the United States. He discussed the employment of patients with tuberculosis and heart disease, preventive training in industrial safety, free medical first aid and dental clinics for workers, and the rôle of visiting nurses in industry. Barros Barreto stressed the value of periodic health examinations from the standpoint of the workers. He also showed the need of placing this work in the hands of experts. In concluding, plans were sketched for introducing industrial hygiene work in Brazil.

Neurorelapse

Dr. G. de Moura Costa reported to the Society of Neurology, Psychiatry and Legal Medicine a case in which the patient received at first two injections of neo-arsphenamine. Fifteen days afterward, headaches and right peripheral facial paralysis appeared. The interesting part was the enormous cerebrospinal lymphocytosis, 3,160 per cubic centimeter, probably the highest on record, as Van Haecke found only 2,400; Benario, 2,000; Dreyfus, 1,600; Zealoziecke, 1,500, and Jeanselme, 900. After an arsphenamine course, with a total dosage of 7 Gm., all symptoms disappeared, and the cerebrospinal fluid became normal. A neurorelapse is always proof of insufficient arsenical treatment. Among approximately 800,000 injections of mercury, Moura has never seen a single nerve relapse.

Public Health Courses

The law reforming medical teaching in Brazil created a special postgraduate course in hygiene and public health for physicians. Those completing the course become eligible to positions under the federal public health service, without having to pass the usual examination. The course is given in the Oswaldo Cruz Institute, under the supervision of the dean of the medical school. It includes: general epidemiology and prophylaxis; organization of special preventive measures; applied biometrics and statistics; food hygiene and bromatologic essentials; urban and rural sanitation; prenatal care, infant hygiene and school sanitation; professional and industrial hygiene; public health administration, and legislation. The course lasts a whole year. As a prerequisite for enrolment, an M.D. degree and completion of a course in microbiology in the Oswaldo Cruz Institute (or its equivalent as proved by examination) are essential.

Personal

At the invitation of the Paris and Berlin universities, Prof. M. Couto, president of the National Academy of Medicine and the most prominent Brazilian clinician, has left for Europe to deliver several lectures.

BERLIN

(From Our Regular Correspondent)

Feb. 13, 1926.

Swimming Pool Conjunctivitis

In the Berliner Verein für Schulgesundheitspflege, Prof. Dr. Comberg of Berlin discussed swimming pool conjunctivitis. It was first observed in Berlin in 1899. In 1919 forty-six cases developed among patrons of the Neukölln city baths. The disease manifests itself in the following manner: A few days after exposure in the swimming pool, one eye becomes red and swollen. This condition is accompanied by lacrimation and a slight narrowing of the palpebral fissure. The follicles of the lower lid are swollen, and, in severe cases, the same condition occurs in the upper lid. Only the conjunctiva is affected. Ulcers do not occur. The infection lasts usually only a few weeks, yielding to treatment. Patients are often unaware of the condition. In 1919, of 250 bathers at the Neukölln swimming pool, Comberg found ten affected with the disease, unknown to themselves. Since 1919, 416 cases have been observed. However, during the last nine months, prophylactic measures have been instituted in all the swimming pools of the city, and no new cases have developed, although recurrences in former patients have been noted.

Prof. Dr. Seligmann of Berlin discussed the prophylactic measures that have been employed. Daily treatment of the water with chlorine gas has been effective. Every few days, the water of the pools is subjected to a chemical, bacteriologic and biologic examination. In addition to disappearance of the conjunctivitis, an indirect hygienic advantage is that it is now unnecessary to change the water daily. This saves time and money, so that the price of baths has been reduced.

Distribution of Age-Groups in Germany

"The war and, to no less extent, the inflation of the currency have left their fatal mark on the distribution of age-groups in Germany, and one of the principal tasks of the interpreter of the figures of the last general census is to explain the probable effects of future adjustments," writes Oberregierungsrat Roesle in the *Deutsche medizinische Wochenschrift*. He emphasizes the reduced percentage of children under 10 years of age and because of war losses of

men between the ages 26 and 45. To be sure, there is a reserve force in the men and women born between 1900 and 1914, who now constitute the 11-25 age-group, and who represent a larger percentage of the total population than the corresponding group did in 1910. It is, however, doubtful whether the 11-25 age-group, which, during its physical development, suffered from the exigencies of war and which, in the coming years, will bear the burden of the peace treaty, will develop greater fertility than the present group that is passing through the productive stage of life. Roesle thinks it probable that, in view of prospective burdens, they will restrict the number of their children.

Those who do not find an opening or who demand better living conditions than their environment promises them, emigrate to other lands. Therefore Germany, since the war, has again become a migrating nation, and, from all appearances, will remain such until the age-groups weakened by the war and postwar inflation have taken their places in the economic and industrial life of the country. This, however, will not be before 1930.

The modifications in the age distribution of Germany's population influence the mortality rates. German mortality rates since 1921 have been the lowest ever recorded. One of the most important causes is the changed age distribution of the population. With the decrease in the number of births, there has been a decrease in the number of children dying. At the same time, the life expectancy of children has increased greatly. In 1924, the proportion of deaths among children under 1 year of age was only 18.7 per cent of the total number of deaths, as compared with 26.4 per cent in 1913 and 35.8 in 1901. There has therefore been a shifting of the age distribution of decedents in recent years, in the direction of the older age-groups, beginning with the 10-20 group.

PRAGUE

(From Our Regular Correspondent)

March 1, 1926.

Veneral Disease Census

The first period of reporting of cases of venereal disease occurred in February, 1921. At that time notification was not obligatory. The new law on venereal disease control, enacted July 11, 1922, includes a clause leaving it to the discretion of the ministry of health to require, when necessary, from physicians and medical institutions, notification of venereal diseases. The names of patients are not required to be given. The ministry of health plans to order such reporting over a period of one month every five years. The month of February was selected, and February, 1926, was chosen for the second period of reporting. During the first venereal disease census all the cases under treatment were reportable, but this time reports were confined to cases which came under treatment by physicians for the first time in the course of the month. The reason for this is that the health service is not so much interested in the number of infected persons as it is in the incidence of new infections. The revelation of a big reduction in the incidence of these diseases is anticipated. The total reported this time is over 21,000. By another scheme of notification, venereal patients are compelled to continue treatment until symptomless. Every physician is obliged to report patients by name to the health authorities if they discontinue treatment before they are released by him.

Section for Study and Reform of Health Service

Five years ago a section for the study and reform of health service was organized in the ministry of health in cooperation with the International Health Board of the Rockefeller Foundation. This bureau was composed chiefly of former fellows of the Rockefeller Foundation who were sent to the United States for postgraduate education in public health. To the section an advisory board was added which was supposed to adapt to local needs the new ideas brought forward by the former fellows. Under the auspices of the section, national surveys of tuberculosis and venereal disease have been conducted which served as a basis for national programs to combat these diseases. A bureau for public health education was created in the ministry of health, and public health demonstrations have been organized. Recently the section has been transferred to the state institute of public health, which is being conducted in cooperation with the International Health Board of the Rockefeller Foundation.

New President of Association of Czech Physicians

Prof. Ladislav Syllaba gave his opening lecture, February 8, as the newly elected president of the Association of Czech Physicians in Prague. Professor Syllaba gave a birds'-eye view of the development of this corporation since its foundation in 1862. The association owes its existence to the initiative of J. E. Purkinje, who held the chair of physiology in Prague at that time. The first meetings were held in the lecture room of the physiologic institute, and Purkinje, with his pupils, supplied most of the material for papers and discussions. Purkinje remained at the head of the association until his death in 1869. Since its creation, the association has held meetings every Monday. While most of the lectures come from the different institutes of the medical faculty, practicing physicians show great interest in the proceedings of the association. Thus, the association has become an important instrument for raising the standard of the practicing medical profession. The new president of the Prague Association is the head of the Czech clinic for internal diseases in Prague.

Sickness Insurance

At present, private officials (clerks, accounting officers, supervisors in factories, managers) come under the general sickness insurance law, which includes chiefly industrial and agricultural laborers. The laborers are chiefly interested in the financial benefits from the insurance in case of sickness. On the other hand, private officials are usually employed on contract, and in case of sickness their salaries continue for a certain period. Therefore they are more interested in the quality of the medical service to which they are entitled under the insurance. After long discussion, it has been decided that sickness insurance for laborers shall be separated from that of private officials. In the bill that will be submitted to parliament, the emphasis is laid on medical service. The patient shall be free to choose his physician from a list of practitioners who have declared themselves willing to treat patients under the terms of the insurance fund. This measure, furthermore, satisfies the medical profession, which for a long time has been fighting for this system.

Physical Development of School Children

Recently, in the district of Kralupy, the Czech Anthropological Institute in Prague has weighed and measured 3,000 school children. There is much immigration into this district, owing to intensive industry. Therefore the average child in Kralupy can be taken as representative of the children of an industrial community of Czechoslovakia. The results were tabulated and standards determined for different ages and both sexes. These results were compared with similar figures for 1895. The comparison shows that the children of the present generation are generally one year more advanced in their development than those thirty years ago. The explanation suggests itself that the conditions under which children live have improved. Therefore there may be an earlier development during the preschool age, so that the children enter school in better physical condition than was the case thirty years ago.

Marriages

HERMAN BRYAN, Chufos Province Shantung, China, to Miss Esther J. Love, formerly of Fremont, Ohio, at Shanghai, February 15.

WILMER C. EDWARDS to Miss Lucile B. Postel, both of Richland Center, Wis., February 19.

EDWARD HAROLD MAUER to Miss Anna Felice Egan, both of New Orleans, February 10.

Deaths

George Frederick Keiper ✠ Lafayette, Ind.; University of Michigan Medical School, Ann Arbor, 1890; fourth vice president, in 1916, member of the House of Delegates of the American Medical Association, 1922, 1923, 1924 and 1925, and a member of the reference committee on amendments to the Constitution and By-Laws, 1924 and 1925; past president and vice president of the Indiana State Medical Association; member of the American Academy of Ophthalmology and Oto-Laryngology, the American Laryngological, Rhinological and Otological Society, the Chicago Ophthalmological Society, Indiana Academy of Ophthalmology and Oto-Laryngology, and the American Bronchoscopic Society; a frequent contributor to medical journals; member of the board of education of Lafayette, 1916-1919; trustee of De Pauw University, 1898-1925; on the staffs of St. Elizabeth's, Wabash Valley and Lafayette Home hospitals, and the Indiana State Soldiers' Home; aged 59; died, March 18.

Robert Edward Lee Newberne ✠ Washington, D. C.; Georgetown University School of Medicine, Washington, 1893; chief medical supervisor, U. S. Indian Service since 1918; past president of the Philippine Islands Board of Medical Examiners and the Philippine Islands Medical Association; also a dentist; member of the Idaho State Medical Association; formerly lecturer on nervous and mental diseases, legal medicine and medical jurisprudence, University of the Philippines College of Medicine and Surgery, and chief, Free Dispensary Division, Philippine General Hospital; aged 53; died, February 15, at Phoenix, Ariz., of cerebral hemorrhage.

Norman Kerr ✠ Chicago; McGill University Faculty of Medicine, Montreal, Que., Canada, 1889; member of the Chicago Surgical Society; formerly professor of surgery, Chicago Policlinic and Hospital; on the staff of the Henrotin Memorial Hospital, and at one time on the staffs of the Children's Memorial and Cook County hospitals; served during the World War; aged 58; died, March 8, of heart disease.

Charles Ellery Denison ✠ New York; Bellevue Hospital Medical College, New York, 1882; for thirty-seven years connected with the board of health; formerly on the staff of the Metropolitan Hospital; aged 68; died, March 3, of epidemic encephalitis contracted about five years ago.

William Archibald Monroe ✠ Sanford, N. C.; University of Maryland School of Medicine, 1886; past president of the Seaboard Surgical Association; formerly member of the school board, and member of the state legislature; aged 62; died, February 26, of influenza.

Wendell Lee Latimer, Lowndesville, S. C.; Emory University School of Medicine, Atlanta, 1922; physician in charge of the Children's Hospital of the Pennsylvania State Sanatorium, South Mountain, Pa.; aged 31; died, February 19, at Montalto, Pa., of tuberculosis.

George Edgar Robison, Salt Lake City, Utah; College of Physicians and Surgeons, Baltimore, 1898; member of the Utah State Medical Association and the Radiological Society of North America; aged 56; died, February 10.

Lawrence Ingram, Richmond, Va.; Medical College of Virginia, Richmond, 1886; member of the Medical Society of Virginia; formerly president of the Manchester Board of Health; aged 61; died, February 19.

Needham Harvey Grady ✠ Hot Springs National Park, Ark.; St. Louis College of Physicians and Surgeons, 1901; aged 73; died, February 24, at a hospital in St. Louis, of chronic nephritis and heart disease.

Charles Sebastian Fischer, Hastings-Upon-Hudson, N. Y.; Medical Department of Columbia College, New York, 1881; aged 79; died, January 28, at the Dobbs Ferry Hospital, Dobbs Ferry, of chronic nephritis.

Annie Hays, Clarksville, Ark.; Medical Department of the University of Illinois, Chicago, 1903; member of the Arkansas Medical Society; aged 63; died, February 24, at St. David's Hospital, Austin, Texas.

William Andrew Stevenson, Oil City, La.; University of Louisville School of Medicine, 1907; member of the Louisiana State Medical Society; aged 48; died, February 23, at a sanatorium in Shreveport.

Nimrod Polk Wood ✠ Independence, Mo.; St. Louis Medical College, 1881; past president of the Jackson County Medical Society; formerly member of the board of education; aged 66; died, February 23.

William A. Fritsch, Evansville, Ind.; Medical College of Ohio, Cincinnati, 1881; Civil War veteran; formerly member of the city and state boards of health; aged 84; died, February 13, of pneumonia.

Stephen Leo O'Brien ✠ Grand Rapids, Mich.; St. Louis University School of Medicine, 1913; on the staff of St. Mary's Hospital; aged 36; died, February 25, of exhaustion ending in acute psychosis.

Caroline L. Black, New York; New York Medical College and Hospital for Women, New York, 1878; member of the Medical Society of the State of New York; aged 78; died, February 24.

Robert Crichton Molison, Marshalltown, Iowa; State University of Iowa College of Medicine, Iowa City, 1897; member of the Iowa State Medical Society; aged 57; died, February 24.

Charles Dutton, Wakefield, Mass.; Medical School of Harvard University, Boston, 1863; member of the Massachusetts Medical Society; aged 86; died in February, of arteriosclerosis.

Fletcher S. Porter, Pickens, S. C.; College of Physicians and Surgeons, Baltimore, 1893; member of the South Carolina Medical Association; aged 56; died, February 24, of uremia.

John H. Harden, Cheraw, S. C.; University of Maryland School of Medicine, Baltimore, 1887; past president of the Chesterfield County Medical Society; aged 63; died, Dec. 31, 1925.

Charles Travis Trumbo, Seymour, Ind.; Indiana University School of Medicine, Indianapolis, 1922; member of the Indiana State Medical Association; aged 38; died, January 15.

Charles H. Craig, Webb City, Mo.; Missouri Medical College, St. Louis, 1887; formerly county and city physician; aged 68; died, February 19, of pneumonia, following influenza.

Carlton V. Hinman, Bellaire, Mich.; Hahnemann Medical College and Hospital, Chicago, 1882; formerly a druggist; aged 67; died, in February, at a hospital in Traverse City.

Francisco Alvarez Cintron, Jr., Detroit; Chicago College of Medicine and Surgery, 1918; aged 32; died, January 23, at the Grace Hospital, of hemorrhage due to duodenal ulcer.

William J. Hornbarger, Heber Springs, Ark.; University of Arkansas Medical Department, Little Rock, 1884; member of the Arkansas Medical Society; aged 66; died, February 26.

Charles H. Russell, Allegan, Mich.; University of Michigan Medical School, Ann Arbor, 1866; formerly city physician of Hastings; aged 83; died, in January, at Los Angeles.

Martin Goldberger, New York; University of Budapest, Hungary, 1888; aged 62; died, January 29, of cerebral hemorrhage, arteriosclerosis, myocarditis and nephritis.

William R. Cotty, Indianapolis; Eclectic Medical College of Indiana, Indianapolis, 1905; aged 58; died, Dec. 25, 1925, of cirrhosis of the liver and tuberculous enteritis.

Robert Pemberton Gerhart, Linden Hall, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1913; aged 38; died, January 31, of pulmonary tuberculosis.

Thomas Vincent Meacham, New Brunswick, N. J.; Bellevue Hospital Medical College, New York, 1891; aged 55; died, Dec. 27, 1925, of cerebral hemorrhage.

John Arthur Farrell ✠ Monrovia, Calif.; Albany Medical College, 1910; member of the Medical Society of the State of New York; aged 39; died, February 14.

William Wilson Nelson, Birmingham, Iowa; Jefferson Medical College of Philadelphia, 1860; Civil War veteran; aged 91; died, February 27, of pneumonia.

John S. Beamensderfer, Manheim, Pa.; Jefferson Medical College of Philadelphia, 1883; aged 68; died, February 8, at the Lancaster (Pa.) General Hospital.

Charles Morgan Williams, Washington, N. J.; Jefferson Medical College of Philadelphia, 1897; also a druggist; aged 55; died, February 8, of pneumonia.

Austin D. Searles, Omaha; Medical Department of the Tulane University of Louisiana, New Orleans, 1894; aged 62; was shot and killed, February 18.

Emmet William Sullivan, Cleveland; University of Wooster Medical Department, Cleveland, 1878; aged 70; died, February 8, following a long illness.

William John Kinder, Aldrich, Mo.; University of the South Medical Department, Sewanee, 1897; aged 68; died, at Springfield, February 19.

Edwin Dickens Brantley, Riverton, Wyo.; Vanderbilt University Medical Department, Nashville, Tenn., 1887; aged 57; died in February.

Douglass Henry Smith ✠ Bath, N. Y.; University of Buffalo Department of Medicine, 1904; aged 46; died, March 4, of heart disease.

Boyce O. Sally, Norway, S. C.; University of Georgia Medical Department, Augusta, 1887; aged 68; died, February 14, following a long illness.

James H. Milam, Dyersburg, Tenn.; Vanderbilt University Medical Department, Nashville, 1883; aged 70; died, in February, of pneumonia.

Daniel Bartholomew Sullivan ✠ Flint, Mich.; Saginaw Valley (Mich.) Medical College, 1901; aged 50; died, February 18, of uremia.

Charlotte H. Woolley, Brooklyn; New York Medical College and Hospital for Women, New York, 1887; aged 75; died, February 26.

Pennington Kiteley ✠ Detroit; University of Toronto Faculty of Medicine, Toronto, Ont., Canada, 1922; aged 32; died, October, 1925.

Monroe Anderson, Dallas, Texas; University of Texas Department of Medicine, Galveston, 1888; aged 79; died, January 25.

John W. Whitehead, Bomer, Tenn. (licensed, Tennessee, 1889); for many years served as justice of the peace; died, January 25.

E. F. Conynghame, Underwood, Minn.; Minneapolis College of Physicians and Surgeons, 1886; aged 70; died in February.

Erick Soegaard, Fillmore, Calif.; Medical Department of the University of Illinois, Chicago, 1901; died, Dec. 5, 1925, at Ventura.

William Sanford Bigelow, Philipsburg, Pa.; New York Homeopathic Medical College, 1884; aged 72; died, February 19.

Walter Harris Dinsmore, Vancouver, B. C.; Medical School of Maine, Portland, 1880; aged 68; died, February, at Ottawa, Ont.

Albert Henry Tuttle ✠ Cambridge, Mass.; Medical School of Harvard University, Boston, 1886; aged 64; died, March 1.

Owen Randolph Altman ✠ Uniontown, Pa.; Jefferson Medical College of Philadelphia, 1901; aged 54; died, February 23.

Elsie Belle Merritt, Sanitarium, Calif.; American Medical Missionary College, Chicago, 1901; aged 50; died, February 19.

Susan P. Hammond Field, Boston; Boston University School of Medicine, 1880; aged 85; died, in December, 1925.

James E. Hyett, St. Marys, Kan.; Chicago Medical College, 1904; aged 55; died, February 26, at a hospital in Topeka.

John J. O'Brien, Chapman, Kan.; University of Louisville (Ky.) School of Medicine, 1890; aged 60; died, February 12.

Frederick Andrew Hess ✠ Chicago; Rush Medical College, Chicago, 1873; aged 74; died, Dec. 25, 1925, of angina pectoris.

Homer T. Jackson, Verona, N. Y.; University of Buffalo Department of Medicine, 1881; aged 79; died in February.

Charles Albert McNeill, Indianapolis; Medical College of Indiana, Indianapolis, 1901; aged 50; died, February 19.

William Garrison Mizner, Oakland, Calif.; Cooper Medical College, San Francisco, 1889; aged 61; died in February.

Lewis K. Riley, Richmond, Calif.; Cooper Medical College, San Francisco, 1882; aged 84; died in January.

L. H. Ross, Ekin, Ind. (licensed, Indiana, 1897); aged 72; died, January 13, of cerebral hemorrhage.

Charles F. Howell, Riverside, Calif.; Keokuk Medical College, 1901; aged 59; died, Dec. 27, 1925.

John Bledsoe, Perry, Mo.; Missouri Medical College, St. Louis, 1867; aged 86; died, Dec. 27, 1925.

J. R. Echols, Lubbock, Texas (licensed, Texas, under the Act of 1907); died, February 8.

Correspondence

ELECTROLYSIS FOR SUPERFLUOUS HAIR

To the Editor:—May I add some comments to the inquiry appearing in THE JOURNAL, March 6, page 709, as to the proper outfit for the removal of superfluous hair by electrolysis, and the reply thereto, which does not quite cover two important points.

Electrolysis is based on the polarity action of the constant (galvanic) current. A fine, bulbous pointed platinum needle is inserted into the hair follicle, and connected to the negative pole (cathode) of a source of galvanic current: either a few dry cells connected into a battery, or the commercial "direct" current passing through a suitable resistance (rheostat) or the "alternating" current changed into a direct one by a motor generator. A gauze or sponge covered "indifferent" electrode, held by the patient, is connected to the positive pole (anode). A current of about 2 milliamperes, flowing for not more than twenty seconds, will produce sufficient caustic sodium hydroxide around the needle to destroy the lining of the hair follicle; at the same time hydrogen is liberated, which appears at the mouth of the follicle with a slight crackling noise.

It is perfectly evident why the instrument described by the inquirer produced nothing but a painful sensation: because it was a simple faradic coil, totally unsuited for what it was bought for. An induced (faradic) current, flowing with unequal alternation from one pole to the other, lasting only about $\frac{1}{1000}$ second in either direction, is totally devoid of polarity action, but will produce a painful sensory stimulation. Such a current cannot be measured by any milliammeter.

As long as physicians will depend on the advice of salesmen for the selection and proper use of their electrotherapeutic apparatus, they and their patients will have to expect some very disappointing results.

RICHARD KOVACS, M.D., New York.

INSULIN IN EXCESSIVE VOMITING AND ECLAMPSIA

To the Editor:—The editorial comment in THE JOURNAL, February 20, entitled "Insulin in Excessive Vomiting and in Eclampsia" was of distinct interest to me. I am firmly convinced of the infinite possibilities for harm which exist in the advice that insulin be given to these patients. This is particularly true of the recommendations of Stander and Duncan, and while I believe that insulin should not be added to the glucose injections given for the vomiting of pregnancy, it seems to be positively dangerous in eclampsia.

Shortly after hearing my paper on "Hyperemesis Gravidarum," which was read at the last session of the American Medical Association at Atlantic City, Thalhimer wrote to me asking me to withhold its publication because he was certain that I was wrong in my advice against the addition of insulin to the glucose, and that he was right. I suggested that we let the Toronto group referee the matter, and sent all his reprints together with mine to Professor Macleod. He was away, but one of his assistants replied by saying that the opinion of the entire group was represented by an article to which he gave me the reference. This was in *Medicine* (**3**: 284 [Aug.] 1924) by W. R. Campbell and J. J. R. Macleod, and read as follows:

> The use of insulin in pernicious vomiting of pregnancy is, in our opinion, unnecessary. No case of postoperative acidosis has required it and it is difficult to see what purpose it could serve. Its use in nonketonic acidoses is even more questionable, and indeed one may be permitted to doubt its value in conditions other than those in which there is a distinct deficiency of endogenous insulin production. Those who insist on regarding all the ills the flesh is heir to as due to an indefinite endocrine

unbalance will do well to pause before applying insulin recklessly. Insulin is a powerful drug.

Thalhimer suggested the use of insulin in addition to glucose to control the condition [referring to Thalhimer's work in vomiting of pregnancy] in severe cases. It is difficult to appreciate the use of the drug in this type of case. In Toronto no case of uncomplicated pernicious vomiting sufficiently severe to warrant the trial of insulin in addition to fluids and glucose has been encountered in the last two years [referring here to the statement that "most of these cases can be controlled satisfactorily by administering glucose and an adequate amount of fluids"].

This article was sufficiently corroborative of my own opinions, so that I had no hesitancy about proceeding with the publication of my paper, and wrote Thalhimer accordingly. In fact, if I had known of this statement by these authorities in time to include it, additional force would thus have been given to my arguments.

Thalhimer's idea is so plausible, that because insulin with glucose is useful in diabetic acidosis so should it also be more valuable than glucose alone in similar conditions of nondiabetic origin, that it is being generally accepted without question. As a matter of fact, the theory of the treatment of the two states is fundamentally different in each instance. In the one, insulin is given on account of the diabetic lack of endogenous insulin with glucose to buffer it or protect the patient against the ill effects of insulin overdosage, whereas in toxemic acidosis of pregnancy the glucose is given for its liver-sparing effect and to restore the depleted liver, storage rather than combustion being the desired effect. This patient presumably has her usual endogenous insulin production unimpaired.

I think that Thalhimer's conclusions have been based on too few cases, and I have been unable to disregard the opinions on the action of insulin held by such authorities as Macleod and Campbell, especially when my own clinical experience coincides with this. Incidentally, Harding has just published (*Am. J. Obst. & Gynec.*, January) a similar conclusion; and, while he neglects, as has been the case more than once before, to refer to my published opinions on this, making no reference whatever to my last article, he agrees nevertheless that insulin should not be used.

I have been unable to detect any advantage from the addition of insulin to glucose in these cases; but, admitting that this does exist, it must still be granted that glucose alone is safe and effective, whereas, to quote the very fathers of insulin, "it is an exceedingly dangerous drug." It does not seem possible that a theoretical advantage which is slight clinically, if it even exists at all, offsets the distinct risk of this drug in nondiabetic acidosis. My definite opinion is that Thalhimer's reasoning is incorrect and that the addition of insulin is actually contraindicated. As I stated in my last article, if a hyperglycemia still persists after the administration of insulin, there is as much if not more reason for feeling that any beneficial effects of the treatment are due to the persisting excess of sugar over normal, as to the presence of some insulin, especially when it has been shown that glucose buffers and invalidates the action of insulin in a definite and constant ratio.

Thalhimer's chief argument in favor of insulin with glucose, as I understand it, is that the acidosis of these cases, as evidenced by acetone and diacetic acid in the urine, disappears more quickly by his method than by mine. If there is any difference, it is only a matter of a few hours at the best.

In the meantime, the note of warning which I tried to sound is being utterly ignored. Stander and Duncan of Baltimore report, as you point out, only six cases of eclampsia, with recovery in all (the last thirteen I have had recovered likewise, eight of them without insulin, but this proves nothing) and if they continue their tests they will find many eclamptic patients with low blood sugar (as in the table in my article on "Intravenous Injections of Glucose in Toxemia of Pregnancy" The Journal, Jan. 14, 1922, p. 92).

This much is a conceded fact in eclampsia: There is a tremendous expenditure of muscular energy during each convulsion, so that the patient may be compared to a man who has just run a strenuous race. In his case it is obvious that insulin should not be administered, because under the circumstances the risk to him would be far greater than if he had been eating and resting. Nor does he need insulin to help him "metabolize" the food or, better still, the sugar that should be given him after his race, because his endogenous insulin production is normal. Is it logical reasoning to treat what is nothing more than a variable symptom, so far as we know (hyperglycemia in eclampsia), by giving insulin when we do know that under comparable circumstances it is harmful and dangerous?

There are, it seems to me, boundless possibilities for harm in the recent publication of Stander and Duncan, as well as the general recommendation that insulin be used with glucose in all of these toxemias of pregnancy. Even Thalhimer agrees that it is still an unsettled question, and until it is settled there is an interval in which different workers are bound to be affected differently. Many will take it as settled and will push the use of insulin. Stander and Duncan were undoubtedly inspired by Thalhimer's work, and the line of reasoning which will follow on the part of innumerable physicians throughout the country will be, "If at Hopkins they believe that insulin is good for eclampsia, we will use it. If the patient does not improve promptly, we will give more, and more, and more until something happens."

Until the action of insulin is definitely understood and no longer a highly theoretical subject, the dangers and uncertainties of the drug should be pointed out in any discussion of its possible effect in pregnancy toxemias, or in other nondiabetic acidoses.

Paul Titus, M.D., Pittsburgh.

VITAMIN POTENCY OF COD LIVER OIL

To the Editor:—I was interested in the query on the emulsification of cod liver oil and vitamins (The Journal, February 27, p. 645), and do not believe that general opinion agrees with your statements that emulsified cod liver oil is equal in vitamin potency to the unemulsified cod liver oil. This would hardly seem true if for no other reason than that emulsified oil contains not more than 50 per cent of cod liver oil and consequently there would be 50 per cent less vitamin in the same dose. Tests made on a number of samples of emulsified cod liver oil have shown that even when allowance is made for the difference in cod liver oil content, there is proportionately less vitamin A content in emulsified cod liver oil. This may be due to the fact that vitamin A in emulsified oil is less stable than in oils not emulsified. The antirachitic factor, or vitamin D, is apparently not as much affected in emulsion as is vitamin A.

John F. Anderson, M.D., New Brunswick, N. J.

"TRACHOMA AMONG THE NORTH AMERICAN INDIANS"

To the Editor:—In The Journal, February 6, appears my paper on this subject, followed by an elaborate discussion, the latter carrying the inference that the program outlined by the Department of the Interior through its Indian Bureau did not admit of practical application. The reports of the bureau since those remarks were made have shown accomplishments decidedly in advance of what were anticipated, and I take this opportunity to ask that you give publicity to the additional facts supplied to me by Assistant Commissioner Merritt. In the declining days of 1925, he informed me that in 1925 some 68,223 Indians were examined for trachoma, of whom 14,036 were found to have the disease. There were

performed 8,455 operations, and 5,581 cases were treated otherwise. This represents only the trachoma work of the special physicians detailed for this purpose. All the Indian Bureau's physicians took part in the program, but their reports are not as yet available. Our contention that the Indian Bureau was the proper source from which to attack this problem seems to be justified by their results. The assumption that it is a problem belonging to the adjacent white communities is an acknowledgment of helplessness. The great bulk of cases that may be approached through the bureau points the way to the solution of the problem.

The need of hospitals well equipped with nurses must not be overlooked.

L. WEBSTER FOX, M.D., Philadelphia.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

CURAY LIGHT APPLICATORS

To the Editor:—Will you kindly give me information about the Curay light applicator, which is claimed to supply a great amount of therapeutically active ultraviolet rays? Kindly omit name.

M.D., Connecticut.

To the Editor:—What is the accepted value of ultraviolet ray therapy in otolaryngology? The manufacturers of equipment are claiming a great deal, but I see very little in the literature by recognized leaders in the specialty. What is the status of the Curay light? Please use initials only.

R. W., Virginia.

To the Editor:—Kindly give your opinion on the effectiveness of a new instrument supposed to generate the ultraviolet ray. This instrument is made and sold by the Curay Company, 383 Boylston Street, Boston. How does it compare with Hanovia's alpine sun lamp?

E. G. LARIVIERE, M.D., New Bedford, Mass.

ANSWER.—The source of light in a Curay lamp is an incandescent tungsten filament enclosed in a glass bulb. It is, as a matter of fact, an ordinary automobile headlight lamp. When used in the Curay apparatus, the lamp is operated on a higher current than its normal rating carries. The filament is therefore heated to a higher temperature than it is when used on an automobile. Accordingly, the average length of life of the lamp is greatly reduced.

The spectral energy distribution of the Curay lamp is that of a hot body radiator, and it is possible by means of Planck's equation to calculate the relative amount of emitted energy for any spectral region. It is well known that a radiator of this type emits most of its energy in the form of heat, but a small fraction of energy will be emitted as ultraviolet energy. Since the temperature of the filament is much below the temperature of the sun, the radiant energy which it emits will contain a smaller proportion of ultraviolet than the energy of sunlight.

Comparing the Curay lamp with the quartz mercury vapor arc lamp, the amount of ultraviolet rays emitted is insignificant. Planck's equation does not apply to the spectral energy distribution of the mercury vapor arc. The mercury vapor arc emits a relatively large fraction of its energy in the ultraviolet region of the spectrum.

It follows that the light emitted by the Curay lamp is not comparable with sunlight, for not only is the total amount of energy emitted less than that of sunlight, but a much smaller proportion of the energy emitted is in the form of ultraviolet rays.

Further, the Curay lamp has a glass bulb, which will strongly absorb the ultraviolet rays given off by the filament. The Curay Company supplies a photograph of a spectrum stated to be that of the Curay lamp. This photograph shows a spectrum extending as far as the ultraviolet—or perhaps farther—and then a spectrum of sunlight alleged to have been made by the same spectroscope and under similar conditions. The photograph gives no information as to the comparative intensities of the light in the ultraviolet region.

An exposure of the skin in actual contact with the quartz rod "applicator" supplied with the Curay lamp for one-half hour showed no ultraviolet erythema. An exposure of three and one-half minutes at a distance of 1 meter with a quartz mercury vapor lamp produced a marked erythema.

The Curay Company also supplies letters containing accounts of supposed "cures" of colds and bacterial infections, but these concern uncontrolled experiments. There seems to be no actual evidence that the lamp was a contributing factor in the "cure."

"COPPER ITCH"

To the Editor:—In a local copper works, several of the men who are employed there are suffering with a form of dermatitis which they call "copper itch." This form of dermatosis affects the arms and legs and is in the form of an itching, red and somewhat scaly eruption. The lesions tend to become chronic, with thickening of the epiderm and lichenification. Kindly report to me the most efficient form of therapy for these lesions; if you mention formulas, please give percentages and vehicles employed.

ELMER G. SHELLEY, M.D., North East, Pa.

ANSWER.—According to Kobert (Lehrbuch der Intoxikationen, Stuttgart, 1897) workers in copper may develop a greenish coloration of the skin, conjunctiva and hair and a red purpuric line on the gums. Winkler (Die Schädigungen der Haut durch Beruf und gewerbliche Arbeit, Leipzig **2**, nos. 1-4, 1925) has observed similar changes in ammunition workers and watch makers. In the latter, beneath the finger nails, he has sometimes found greenish deposits containing copper. Ravogli has described two cases of dermatitis occurring in workers in a brass foundry. In both these cases the skin of the legs was red and edematous, whereas that of the thighs was covered with an intensive pruritic papular eczema. After involution of the lesions there remained a dark brown pigmentation. In addition to these changes there were necrotic ulcers on the thighs in one of the cases. Teleky-Brezina (Internationale Uebersicht über Gewerbekrankheiten, 1921) saw a series of cases in girl metal workers who had developed a dermatitis on the finger tips from soldering brass objects. Herxheimer (*Dermat. Wchnschr.*, 1912, no. 1) described cases of dermatitis developing as a result of the action of weak sulphuric acid and oil on copper wire. Electrical workers sometimes become tattooed from contact with copper and brass.

The treatment should first of all consist in protecting the affected workers from contact with the copper. As the legs and arms are chiefly affected, it would be well to attempt by means of long sleeves and boots or puttees to protect the extremities from the copper dust. Thick denim overalls with sleeves bound tightly at the wrists and the trouser legs at the shoe tops might be of service if washed daily or several times weekly.

In the early acute stage one of the calamine lotions might be useful. Sometime later a simple soothing protective salve might be applied twice daily after cleansing of the parts with olive oil. In the old cases, radiotherapy consisting of ¼ or ½ skin unit doses every ten days to two weeks for three or four doses would probably be found very effective.

VARIATIONS IN WASSERMANN REACTION

To the Editor:—I am frequently receiving, on cases, Wassermann reports that vary greatly in two-day intervals and the cases are not receiving treatment. Examples of the variation are shown below:

Name	1/17/26	1/19/26	1/22/26	1/24/26
A. B.....	4 plus	2 plus	Negative	2 plus
A. G.....	4 plus	Negative	Plus-minus	Negative
A. S.....	1 plus	2 plus	4 plus	2 plus
R. S.....	4 plus	Negative	4 plus	

The laboratory informs me that this may be caused by the daily change in the blood of the patient or may be due to the minute dilutions of the various agents that enter into the Wassermann reaction. As these patients were not receiving any treatment during this time and, as far as I know, had never received any treatment, I do not consider this explanation satisfactory. These Wassermann tests are made as part of a routine examination, and when such a marked difference is noted in such a short interval, no treatment being given, it causes me to question the value of these reports. Would you be kind enough to advise me if this is a frequent occurrence in the Wassermann report? Also, your comments and any suggestions would be appreciated. Please omit my name and address.

M.D., New York.

ANSWER.—Such widespread discrepancies in Wassermann reports on apparently normal patients are not of frequent occurrence when the Wassermann test is properly performed. Formerly Craig cited such variations, but his work has not been substantiated by the majority of serologists.

Assuming that glassware is carefully cleaned, that uniform type and period of incubation is employed and that the same antigens and the same amboceptor are used from day to day,

an explanation for such phenomena may be given under the following heads:

1. The complement obtained from guinea-pig serums varies in activity and its ability to be bound by syphilitic reagin. For that reason, pooled serum from at least three guinea-pigs aids in giving a more uniform product. The blood should be taken from pigs that have had no food the day of bleeding.

2. The older form of titrating complement gave too wide a variation between two units of one day and two units of the next.

Example: Originally 1:10 dilution of complement was used with 0.1 cc. intervals; today, 1:30 dilution of complement is used with 0.05 cc. intervals, therefore greatly refining the sensitivity of the test.

3. The amount of native amboceptor present in the patient's serum may vary somewhat at different intervals, making a factor in variation of the test when it is not absorbed as routine practice. This may show more particularly when shorter periods of incubation are used rather than in the case of the eighteen hour icebox fixation.

THE KROMAYER LAMP

To the Editor:—Please advise me regarding the efficiency, therapeutic dependability and ethics in the use of the Kromayer lamp, put out by the Hanovia Chemical and Manufacturing Company, Newark, N. J. Will these lamps do what is claimed for them therapeutically?

C. B. GREEAR, M.D., Honaker, Va.

ANSWER.—According to determinations made by the Hanovia Manufacturing Company and which correspond to those of the Bureau of Standards, the Kromayer lamp emits no radiation shorter than 2,000 angström units or longer than 14,000 angström units. Of the total radiation emitted, approximately 65 per cent falls in the ultraviolet field, and since the input of energy is 5 amperes, with a 70 volt drop across the burner, and since the radiation is confined to a small area, this lamp supplies as great intensity of ultraviolet per unit area as any commercial source designed for therapeutic use. The apparatus is dependable both mechanically and therapeutically.

Concerning the question, "Will these lamps do what is claimed for them therapeutically?" The Kromayer lamp does produce the ultraviolet rays, but no assertion can be made as to the therapeutic properties of the rays. The company has collected the reports of results of investigations with the lamp, and supplies the references.

GONOLIN—LUESAN

To the Editor:—I am enclosing a leaflet that I would like to ask you about. The product described is recommended by one of the oldest physicians' supply houses, and I have bought drugs of them, with perfect satisfaction, for years. It would seem that they would hesitate to sell something of doubtful value on account of their reputation, but I have not seen anything about this in the literature. Has it been passed by the Council?

L. C. KNIGHT, M.D., Carthage, Ill.

ANSWER.—The leaflet sent deals with Gonolin and Luesan, neither of which has been passed by the Council. The two products are manufactured by the Horovitz Biochemic Laboratories Company, 67 Fulton Street, New York. A. S. Horovitz, president of the Horovitz Biochemic Laboratories Company, was referred to in connection with the asserted cancer cure "Autolysin" (THE JOURNAL, July 24, 1915, p. 336). Later he appears to have been largely responsible for the "Proteogens" which the Council on Pharmacy and Chemistry declared inadmissible to New and Nonofficial Remedies (Proteogens of the William S. Merrell Company, THE JOURNAL, July 12, 1918, p. 128). Subsequently the company, of which A. S. Horovitz is president, prepared a line of "Protein Substances" similar to the "Proteogens," each one being claimed to be more or less specific against a given disease or condition. The claims advanced for Gonolin and Luesan bear a striking similarity to those made for the discredited "Proteogens."

No product of the Harvey Company, the firm named as distributor on the circular sent by our correspondent, has been reported on by the Council on Pharmacy and Chemistry or by the A. M. A. Chemical Laboratory. However, this is one of the firms some of whose tablets were found deficient by the Connecticut Agricultural Experiment Station (Dependability of Dosage in Tablets, THE JOURNAL, July 27, 1918, p. 300; Nov. 2, 1918, p. 1520). In a subsequent report (March, 1925) of the Connecticut Agricultural Experiment Station, tablets of the Harvey Company were again reported as having undue variation in content.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARKANSAS: Little Rock, May 11-12. Sec., Dr. J. W. Walker, Fayetteville. Homeo. Board, Little Rock, May 11. Sec., Dr. A. A. Pringle, Eureka Springs. Eclectic Board, Little Rock, May 11. Sec., Dr. Claude E. Laws, Fort Smith.

COLORADO: Denver, April 6. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

DISTRICT OF COLUMBIA: April 13. Sec., Dr. Edgar P. Copeland, 1801 Eye St., Washington, D. C.

IDAHO: Boise, April 6. Commissioner of Law Enforcement, F. A. Jeter, Boise.

ILLINOIS: Chicago, April 6-8. Supt. Regis., Mr. V. C. Michels, Springfield.

MINNESOTA: Minneapolis, April 6-8. Pres., Dr. Thomas Lowe, Pipestone.

MONTANA: Helena, April 6-8. Sec., Dr. S. A. Cooney, Helena.

NATIONAL BOARD OF MEDICAL EXAMINERS: Part I, June 21-23; Part II, June 22-23. All applications should be made on or before May 15. Sec., Dr. J. S. Rodman, 1600 Walnut Street, Philadelphia.

NEVADA: Carson City, May 3. Sec., Dr. Simon L. Lee, Carson City.

NEW MEXICO: Santa Fe, April 12-13. Sec., Dr. W. T. Joyner, Roswell.

RHODE ISLAND: Providence, April 1-2. Sec., Dr. Byrum U. Richards, Providence.

TEXAS: Dallas, American Board of Otolaryngology, April 19. Sec., Dr. W. H. Loeb, 1402 South Grand Blvd., St. Louis, Mo.

UTAH: Salt Lake City, April 6. Director, Mr. J. T. Hammond, Salt Lake City.

Ohio January Reciprocity Report

Dr. Henry M. Platter, secretary of the Ohio State Medical Board, reports that 29 candidates were licensed at the reciprocity meeting held at Columbus, Jan. 5, 1926. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Alabama School of Medicine		(1909)	Alabama
Denver and Gross College of Medicine		(1908)	Colorado
University of Colorado School of Medicine		(1910)	Colorado
George Washington University Medical School		(1925)	Dist. Colum.
Howard University School of Medicine		(1924, 2)	Dist. Colum.
	Maryland		
Rush Medical College		(1924)	Illinois
Indiana University School of Medicine		(1918)	Indiana
	(1924) Illinois		
State University of Iowa College of Medicine		(1922)	Iowa
University of Louisville School of Medicine		(1921)	Kentucky
Johns Hopkins University Medical Department		(1917)	Virginia
	(1921) Maryland		
University of Maryland School of Medicine		(1924)	Maryland
Creighton Medical College		(1922), 1924)	Nebraska
Columbia University College of Phys. & Surgs.		(1920)	New York
Jefferson Medical College of Philadelphia		(1914)	Penna.
Temple University Department of Medicine		(1918)	Penna.
University of Pennsylvania School of Medicine		(1917)	New York
Meharry Medical College			
	(1916) Louisiana, (1922) Tennessee,	(1924)	Kansas
Vanderbilt University School of Medicine		(1900)	California
University of Vermont College of Medicine		(1915)	Vermont
University of Virginia School of Medicine		(1905)	Virginia
Queen's University Faculty of Medicine		(1919)	New York
University of Toronto Faculty of Medicine		(1904)	Penna.
University of Vienna, Austria		(1899)	*W. Virginia

* Verification of graduation not completed by the American Medical Association.

Alabama January Examination

Dr. Samuel W. Welch, chairman of the Alabama Board of Medical Examiners, reports the written examination held at Montgomery, Jan. 12, 1926. The examination covered 10 subjects and included 100 questions. An average of 75 per cent was required to pass. Eleven candidates were examined, all of whom passed. Four were licensed by reciprocity and 1 by endorsement of his credentials. The following colleges were represented:

College	PASSED	Year Grad.	Number Passed
Emory University School of Medicine		(1925)	2
Rush Medical College		(1925)	1
Tulane University of Louisiana School of Medicine		(1925)	1
University of Maryland School of Medicine		(1925)	1
Medical College of the State of South Carolina		(1925)	1
Meharry Medical College		(1925)	1
University of Tennessee College of Medicine		(1925)	1
Dalhousie University Faculty of Medicine		(1925)	1
University of Toronto Faculty of Medicine		(1922)	2

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Emory University School of Medicine		(1922)	Georgia
University of Louisville School of Medicine		(1921)	Kentucky
Jefferson Medical College of Philadelphia		(1924)	Penna.
Memphis Hospital Medical College		(1911)	Mississippi
University of Tennessee College of Medicine		(1924)	Tennessee

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
Rush Medical College		(1920)	N. B. M. Ex.

Book Notices

THE PRINCIPLES AND PRACTICE OF ENDOCRINE MEDICINE. By William Nathanial Berkeley, Ph.D., M.D., Recently Attending Physician at the Good Samaritan Dispensary, New York. Cloth. Price, $4.50. Pp. 368, with 60 illustrations. Philadelphia: Lea & Febiger, 1926.

The author of this volume on the glands of internal secretion has good acquaintance with the scientific facts, and, in most instances, presents them fairly and critically. Less critical discrimination is shown in the fields in which in earlier years he had personal contact with experimental work. The chapters on the thyroids, the suprarenals and the sex glands seem best. That on the pineal body is out of proportion in length to what is known concerning the rôle of this body in health and disease. Moreover, the author promotes the use of pineal extract, given by mouth to "backward" children for a long time to improve their mentality. The author seems unacquainted with the numerous reliable researches that show no direct influence of sympathetic nerves on the tonus of skeletal muscles (pp. 30, 31, 143). He states that thyroidectomy in rabbits is without effect (p. 42). This is contrary to fact. "Marine's statement that the immediate cause of goiter (simple) is lack of iodine can hardly be affirmed any more than it can be claimed that the immediate cause of malaria is lack of quinine" (p. 63).

Speaking of his own parathyroid preparation administered by mouth, he reports "remarkable benefits" in the majority of cases of paralysis agitans, despite the improbability of parathyroid origin of this malady, and the indication that the parathyroid hormone is ineffective by the oral route. Showing good judgment in other matters, when it comes to his own parathyroid preparation he accepts support by the ordinary testimonial route:

> The wife of another recent patient writes, we are greatly encouraged and hope he will be entirely well.

Again he says:

> Primary anterior lobe deficiencies of a "functional" or, at least, temporary and curable character, in boys and girls of the infantile type . . . a long series of New York public school children of this character have passed through my hands . . . in the last fifteen years. They receive whole pituitary (special formula prepared for me by a New York wholesaler) in suitable doses, and in the course of one or two years they grow remarkably (p. 188).

We have the right to ask how much the *control* group of similarly "temporary" infantile children grew in the same length of time.

> In the treatment of Froelich's disease the prolonged administration of whole pituitary gland preparation is the most rational procedure (p. 195).

This, despite the evidence of Evans, Smith and others that anterior lobe hormone is ineffective by the oral route.

On page 261 he states that he still "with satisfaction" uses in diabetes his own extract of the pancreas given by mouth, despite the evidence that insulin, except in enormous quantities, is ineffective by that route.

> Ligation or partial excision of the vas deferens causes a slow atrophy of the seminiferous cells (p. 271).

This has been disproved by Moore and others.

> A high degree of sexual ardor at the time of intercourse probably modifies favorably the growth if not the structure of the fertilized ovum (p. 295).

The evidence for this is cited from King Lear.

The author recommends pluriglandular therapies:

> In all cases of depressed metabolism, retarded sex development, and diminished growth, thyroid and anterior pituitary, and probably pineal will act synergically (p. 344).
>
> In frank cretinism it has seemed to me useful to supplement the action of the thyroid with whole pituitary, pineal, and the proper gonad. When the patient is carefully watched, pluriglandular therapy can at least do no harm (p. 345).

The last statement is probably true in regard to the patient's body, but what about the patient's pocketbook and the doctor's mind?

The same kind of therapy is recommended in so-called endocrine obesity:

> It may even be well to give thyroid, pituitary and ovarian (or testis) extract in one pill. . . . The food supply should be slowly diminished and this medication slowly increased until the patient loses 1.5 to 2 per cent of his body weight per month (p. 356).

Why reduce the food supply if obesity is of endocrine origin and curable by feeding endocrine mixtures? By speeding up metabolism, increasing nervous tension, and increasing the energy expenditure in muscular work, thyroid extract will by itself reduce body weight in obesity, even on a uniform intake of food.

The book is written from the standpoint of the clinical practitioner for physicians in active practice. But, curiously enough, the author shows greater erudition, critical judgment and common sense in the presentation of the experimental data than in the presentation of the clinical data. The volume is therefore a "mixed blessing" in this era of mushroom growths of monographic endocrinology.

PRAKTIKUM DER CHIRURGIE. Von Prof. Dr. O. Nordmann, Dirigierender Arzt am Auguste-Viktoria-Krankenhaus Berlin-Schöneberg. Third edition. Paper. Price, 33 marks. Pp. 796, with 511 illustrations. Berlin: Urban & Schwarzenberg, 1925.

In this edition, Nordmann's Praktikum of Surgery has been considerably altered and enlarged, bringing the material to date. The scheme remains essentially as before. The work is the outgrowth of a series of articles contributed to the *Medizinische Klinik* dealing with practical points in general and special surgery, and is designed to bridge the gap between the theoretical knowledge learned in medical school and the problems of actual practice. It is also designed to be of assistance to practitioners who do no active surgery, so that they may more readily understand surgical operations. The book begins with a general survey of operative procedure, including preparation of the operating room and instruments; patient and operator; anesthesia, general, regional and local; treatment of wounds and the after-care of wounds; postoperative complications; pyogenic infections of the various tissues; septic infection; osteomyelitis; chronic surgical infectious diseases; important disturbances of nutrition and enervation; diabetes in surgery; diagnosis and treatment of neoplasms; surgical diseases of the tendons, nerves and muscles; surgical diseases of joints and bones, and indications and technic of amputations, including a discussion of prostheses. The latter half of the book deals with special surgery, discussing the surgical diseases and operations regionally. The author states in his preface that he has not attempted to write a textbook but that he hopes to stimulate reference to textbooks. The field he attempts to cover is so large that of necessity the material is general and would be of no especial value except to a practitioner of limited training. In this country, where the first-class medical schools require, as a prerequisite to obtaining a degree, a hospital internship of at least one year in one of the larger hospitals, such a book has little place.

MODERN METHODS IN THE DIAGNOSIS AND TREATMENT OF PULMONARY TUBERCULOSIS. By R. C. Wingfield, M.B., M.R.C.P., Medical Superintendent, Brompton Hospital Sanatorium. Cloth. Price, $3. Pp. 134, with 27 illustrations. New York: Paul B. Hoeber, Inc., 1925.

The preface states that this little volume is primarily intended for medical students and men in the general practice of medicine. Keeping in mind, therefore, that this book was not intended for the specialist but for the man in general practice eager to learn what the specialist believes and teaches, we approach the book wholly from that angle. Certain statements are detrimental to the best interests of the general practitioner. In discussing the subject of tubercle bacilli in sputum, the author states that the administration of potassium iodide for a week will often produce sputum. This method is decried by most men simply because of the deleterious effect on the lung produced by the administration of potassium iodide. Men in practice in America will not agree with the statement that failure to find disease by physical examination justifies complete reliance on roentgen-ray technic. This statement is reiterated later in the book and gives the physician in pursuit of knowledge the impression that it is more or less a fallacy to learn physical diagnosis when diagnosis can so easily be made with the aid of the roentgen-ray machine. Treatment of tuberculosis by the somewhat antiquated method of the administration of potassium iodide and chlorine water is again revived. What has been said before relative to the administration of iodide for

diagnosis cannot be too strongly emphasized when this method is advised for treatment. The chapters on pneumothorax and thoracoplasty are rather incomplete and leave much to the imagination. There are many things in the book that are commendable. The advice relative to sanatorium treatment, treatment with tuberculin, and many pages of roentgenograms help to improve the book. Yet one cannot but feel that this small volume on tuberculosis is just another book on a subject that has been well covered in the past; that it has added nothing new to our knowledge, and that it is not presented in a better way than in many other books now available.

Troubles de la fonction gastrique et syndromes associés chez les tuberculeux pulmonaires. Par le Docteur Pierre Marsal de la Faculté de médecine de Nancy. Travail de la clinique de M. le Professeur agrégé J. Parisot. Paper. Pp. 315, with illustrations. Paris: A. Maloine, 1925.

Dr. Marsal has made a careful study of gastric disturbances as they appear in the course of pulmonary tuberculosis. He presents an extensive review of the literature on the subject, which is enlightening in that it directs attention to the gropings of medical men in this field a few decades ago. The present work is based on observations made in sixty-five cases of gastric trouble complicating pulmonary tuberculosis. Marsal properly disapproves of forced feeding in the treatment of tuberculosis and, from the energy of his remarks, it would appear that the French physician is still prescribing a rich diet. The author quotes Daremberg, who said that the stomach is the laboratory of health for the consumptive. Marsal also says, "The better the stomach, the better the prognosis." Considerable space is given to radioscopic examination of the stomach; errors in motility and "deformities" are discussed, and methods of arriving at results are compared. The author concludes, on this point, that there is no more a radiologic tuberculous stomach than there is a clinical tuberculous stomach. The results of observations on deformity, motility, hypertonicity and spasms of the stomach are presented. Other subjects considered are the chemistry of the gastric secretions, the pathologic anatomy and the "emetic cough" so well known to those who treat the tuberculous. After a study of emetic cough, the author concludes that the best results are obtained by limitation of diet. Medicinal treatment is best effected by the use of belladonna or its alkaloids and full doses of bismuth subnitrate. The work represents a careful study of a subject not always sufficiently considered by physicians.

Books Received

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for more extensive review in the interests of our readers and as space permits.

The Principles and Practice of Medicine. Designed for the use of practitioners and students of medicine. Originally written by the late Sir William Osler, Bt., M.D., F.R.S. Revised by Thomas McCrae, M.D., Fellow of the Royal College of Physicians, London. Tenth edition. Cloth. Price, $7.50. Pp. 1233, with illustrations. New York: D. Appleton & Co., 1926.

The most recent edition of a medical classic, the new editor having retained everything possible from previous editions, except so far as new knowledge required elimination.

Lead Poisoning. By Joseph C. Aub, Lawrence T. Fairhall, A. S. Minot, and Paul Reznikoff. With a chapter on the prevalence of industrial lead poisoning in the United States. By Alice Hamilton, from the Department of Physiology, Harvard School of Public Health, and the Medical Clinic, Massachusetts General Hospital. Cloth. Price, $4. Pp. 265, with illustrations. Baltimore: Williams & Wilkins Company, 1926.

Excellent monograph on a most widespread industrial disease.

Krankheiten und Hygiene der warmen Länder. Ein Leitfaden für die Praxis. Von Prof. Dr. Reinhold Ruge, Marine-Obergeneralarzt A.D. in Klotzsche bei Dresden; Prof. Dr. Peter Mühlens, Marine-Generalarzt A.D. und Abteilungs Vorsteher am Tropeninstitut in Hamburg, und Prof. Dr. Max Zur Verth, Marine-Generoberarzt A.D. und Oberregierungs-Medizinalrat in Hamburg. Second edition. Paper. Pp. 491, with 457 illustrations. Leipsic: Dr. Werner Klinkhardt, 1925.

Remarkably fine presentation of views of Hamburg school of tropical medicine.

Non-Surgical Treatment of Diseases of the Mouth, Throat, Nose, Ear and Eye. By Thomas H. Odeneal, M.D., Otologist, Rhinologist, Laryngologist and Ophthalmologist to the Beverly Hospital Corporation, Beverly, Massachusetts. Cloth. Price, $4 net. Pp. 428, with 4 illustrations. Philadelphia: P. Blakiston's Son & Co., 1926.

A book planned for general practitioners but rather uncritical in matters of therapy.

Historical, Legal, and Statistical Review of Eugenical Sterilization in the United States. Eugenical Sterilization: 1926. By Harry H. Laughlin, Eugenics Record Office, Cold Spring Harbor, Long Island, New York. Paper. Pp. 75. New Haven: American Eugenics Society, 1926.

Valuable compilation indicating trend of this type of preventive legislation.

Pancréatites chroniques avec ictère. Causes, diagnostic et traitement). Valeur et résultats eloignés de la cholécystogastrostomie. Par le Dr. Pierre Mallet-Guy, Interne lauréat des hôpitaux de Lyon. Préface de M. le Professeur Bérard. Paper. Price, 25 francs. Pp. 307, with illustrations. Paris: Masson & Cie, 1925.

Monograph of especial interest to roentgenologists and surgeons.

The Diagnosis and Treatment of Tuberculosis of the Hip. By G. R. Girdlestone, B.M., F.R.C.S., Hon. Surgeon, Wingfield Orthopaedic Hospital, Oxford. Cloth. Price, $2.50. Pp. 94, with 60 illustrations. New York: Oxford University Press, 1925.

Practical consideration with a view toward orthopedic conservation.

Handbuch der experimentellen Therapie Serum und Chemotherapie. Ein Handbuch für die ärztliche Praxis und Klinik. Herausgegeben von A. Wolff-Eisner. Second edition. Paper. Price, 35 marks. Pp. 790, with 69 illustrations. Munich: J. F. Lehmanns, 1926.

Second edition of a standard foreign system of biologic therapy.

Clinical Disorders of the Heart Beat. A Handbook for Practitioners and Students. By Sir Thomas Lewis, M.D., F.R.S., D.Sc., Consulting Physician to the Ministry of Pensions. Sixth edition. Cloth. Pp. 131, with 55 illustrations. London: Shaw & Sons, Ltd., 1925.

Sixth edition of a standard work by widely recognized authority.

The Pathology of Tumours. By E. H. Kettle, M.D., B.S., Professor of Pathology and Bacteriology, Welsh National School of Medicine, Cardiff. Second edition. Cloth. Price, $5. Pp. 285, with 159 illustrations. New York: Paul B. Hoeber, Inc., 1925.

A manual for students, dealing with general biology, general pathology and special pathology of tumors.

Lecciones sobre Radiologia y Fisioterapia. Por el Dr. Filiberto Rivero, Profesor Titular de la Asignatura de Radiologia y Fisioterapia de la Escuela de Medicina, Universidad de la Habana. Paper. Pp. 270. Havana, 1925.

A Cuban view of modern roentgenology and physical therapy.

The Mosquitoes of Egypt. By T. W. Kirkpatrick, B.A., F.E.S. (Senior Entomologist, Ministry of Agriculture, Egypt). Anti-Malaria Commission. Paper. Pp. 224, with illustrations. Cairo: Government Press, 1925.

Official report of interest to entomologists.

Physiological Papers. Dedicated to Professor August Krogh, Ph.D., LL.D. Paper. Pp. 375, with illustrations. Copenhagen: Levin & Munksgaard, 1926.

Festschrift in honor of the fiftieth birthday of a Nobel prize winner.

The Harveian Oration: On Some Developments of Harvey's Doctrine "Omne Vivum ex Ovo." By Sir Frederick Mott, K.B.E., M.D., LL.D., Consulting Physician, Charing Cross Hospital. Cloth. Pp. 36. London: John Bale, Sons & Danielsson, Ltd., 1925.

Brief essay on heredity in mental disease.

Diseases of the Eye. A Manual for the Practitioner. By Henry Kirkpatrick, M.B. Cloth. Pp. 132, with 28 illustrations. Calcutta: Butterworth & Co., 1925.

Ophthalmologic first aid for general practitioners, as practiced in India.

Medicolegal

Malpractice Case Against Chiropractor—Requirements

(Janssen v. Mulder (Mich.), 205 N. W. R. 159)

The Supreme Court of Michigan, in reversing a judgment entered on a verdict directed for the defendant, and at the same time granting a new trial, with costs to the plaintiff, says that the defendant was a chiropractor who had not complied with the law relative to the registration of drugless healers in Michigan. But, while a failure to comply with the registration statute might subject him to a criminal prosecution, such failure, coupled with a showing of treatment given, was not in itself sufficient on which to base a charge of malpractice. To maintain such an action, the plaintiff must show that the result complained of was due to negligence or unskilful treatment. While not registered, the defendant was a graduate of a chiropractic school. He assumed to treat human ailments only in accordance with the system taught in such school. This fact was well known to the plaintiff. The burden was therefore cast on her to show by competent evidence, not only that his treatment was injurious or not effective, but that the requisite care and skill was not exercised by him in administering it. It necessarily followed that such proof must be made by one engaged in treatment by similar methods to those employed by the defendant. With the merits of the several drugless systems of relieving human ailments, the courts have no concern.

This action was brought by the plaintiff, as administratrix, to recover the damages incident to the death of her daughter, aged about 7 years, the plaintiff charging malpractice by the defendant. The declaration alleged that the defendant knew, or should have known, that the child when brought to him was afflicted with diphtheria, and might fairly be said to charge malpractice by failure or neglect to ascertain the nature of her ailment before treating her. The defendant maintained an office to which people were invited to come for the relief of human ailments. He admitted that there were certain of such ailments which he did not profess to treat. It would seem to follow that he represented and held himself out to the public as possessing the necessary knowledge and skill to determine whether the ailment of the person brought to him was such a one as his treatment would probably relieve. If, as he testified, the class of practitioners to which he belonged does not assume to treat infectious, communicable diseases, they may not be relieved of civil responsibility if they neglect to exercise reasonable care and skill to ascertain whether the person seeking their services is so afflicted.

The defendant admitted that when the child was brought to him she had a fever and was suffering with a sore throat. While the plaintiff knew the nature of the treatment administered by the defendant, she did not know whether such treatment would be efficacious to relieve the ailment with which the child was afflicted. It was the duty of the defendant to use reasonable care and skill so to ascertain. While he insisted that he and others of his school of practice did not diagnose cases or treat diseases, and said that he knew nothing about germs or the symptoms of tonsillitis, quinsy or diphtheria, he did assume to relieve pain and suffering. The words used by him in defining that which he did, such as "palpate" and "adjust," did not change the nature of the act he assumed to perform. When he undertook to administer treatment to the child, he assumed the responsibility of determining whether the treatment he proposed to administer, and afterward did administer, was such as might reasonably have been expected to afford relief. So to determine, it was incumbent on him to use reasonable care and skill to ascertain whether the ailments were of the class to which his treatment applied. If not, it was his duty so to advise the plaintiff, in order that she might secure the services of one familiar with such ailments. His neglect to use reasonable care and skill to ascertain whether or not the child had diphtheria, if established to the satisfaction of the jury, would sustain the charge of malpractice made by the plaintiff. As bearing on the result to the child of such neglect, this court thinks that the plaintiff was entitled to show, if possible, that there is a customary and well known form of treatment used successfully by those of that particular profession who do profess to administer treatment to cure ailments of this nature, and that proper treatment by such a person would probably have afforded relief and saved the life of the child.

This court may take judicial notice that diphtheria is an infectious, communicable disease. It is so recognized by the laws of Michigan.

Malpractice Found in Case of Modeling Redressment

(Mortimer v. Keppler (N. J.), 130 Atl. R. 547)

The Supreme Court of New Jersey says that the plaintiff when 10 years old became afflicted with tuberculosis of both hips and was treated for two years at a hospital. The testimony indicated that in 1921 she was a healthy young woman, except that she had complete ankylosis of her left hip and partial ankylosis of the right, and a misplacement of the right leg. In December of that year she went to the defendant to have him secure her admission to a certain clinic. She told him about having been treated at the hospital for hip trouble. She gave her age as 18 years, although she was at the time about 24½ years old. That, however, appeared not to have been a deliberate misstatement, but owing to lack of knowledge and confusion as to her age. The defendant said that her condition was of a such a minor character as to make it unnecessary for her to go to the surgeon who conducted the clinic; that he could perform the operation himself. He directed her to have a roentgenogram made of her hips. After examining the roentgenogram, he said that he would manipulate the right leg, and would have to use a chisel and hammer on the left; that the operation was a minor one; that she would have to spend five days in the hospital, would be able to go back to work in two weeks, entirely cured and able to walk as well as he walked. He operated on her, Feb. 17, 1922. Immediately afterward she was in intense pain. Subsequently her right foot and lower leg became gangrened, and on April 1 her right leg was amputated at a point just above the ankle. The stump did not heal, and on November 1 there was a further amputation to a point just below the knee.

In one count the complaint charged negligence in an operation and treatment thereafter resulting in the necessity of an amputation of a portion of the plaintiff's right leg, and in another count charged negligence in the care and treatment of the plaintiff after such operation requiring a second amputation. Then, at the opening of the trial, the plaintiff was permitted to amend the complaint by adding a third count alleging an express contract to effect a cure and charging a breach thereof. The defendant answered, denying all negligence, and denying an express contract to effect a cure and any breach thereof. The plaintiff was given a verdict for $8,000 damages, which the defendant argued was against the weight of evidence because: (*a*) the plaintiff had misinformed him as to her age and as a result his diagnosis was based on the false assumption that the condition of her hips had endured for six and one-half years less than was the case; (*b*) the operation performed was a manipulation known as modeling redressment, and was not the operation of brisement forcé; (*c*) the plaster cast was not the cause of the circulatory disturbance; (*d*) the weight of the evidence was that there was some injury either to the femoral artery or to a large blood vessel; (*e*) the weight of the evidence was that there was no express contract to effect a cure. In deciding against setting aside the verdict, the court expresses the opinion that, as to the misstatement of age, there was ample evidence warranting a finding that the difference of six and one-ha'f years was immaterial, while the court's consideration of the testimony led it to the conclusion that the verdict was not against the weight of the evidence.

It was urged that this language in the charge of the jury, "The operation being a so-called bloodless operation for the purpose of correcting an ankylosis or a partial ankylosis or stiffening of the right hip joint," was misleading because the operation was to obtain a better position of the right leg and contemplated the occurrence of ankylosis in the right hip. But, when the whole charge was read, the court does not

think that reasonable men could have been misled. Again, it was contended that the following charge as to diagnosis was prejudicial because it left the jury to say whether the diagnosis was wrong:

> As to the matter of diagnosis—if you find that the defendant in this case did not use reasonable skill and diligence in diagnosing the plaintiff's ailment, and that this error in diagnosis led him to perform an operation which was improper under the circumstances, and that this operation resulted in an injury which brought on a gangrenous condition in the leg, necessitating the amputation of the lower portion, your verdict should be for the plaintiff.

There was a question as to whether the diagnosis was Perthe's disease, under which an operation could safely be performed, while, if tuberculosis was the original cause of the hip trouble, then such operation could not be safely performed. Under such circumstances the charge was proper.

Apparently, although not specifically, referring to an alleged attempt by the defendant to compromise the cause of action, the court says that, as to alleged incompetent evidence it thinks it was competent. It was not shown to have been made without prejudice, and was made before action commenced, and not at the solicitation of the plaintiff but of the defendant.

Vital Statistics Not Part of "Necessary Sanitation"

(Smith, Com'r, et al. v. State et al. (Ga.), 129 S. E. R. 542)

The Supreme Court of Georgia holds that, under a provision of the constitution of that state empowering the general assembly to delegate to any county the right to levy a tax "to provide for necessary sanitation," the legislature could not delegate to a county the right to levy a tax for the purpose of paying the fees of local registrars for services rendered under the vital statistics laws of the state, and that the statute authorizing their payment from the public funds of the county is unconstitutional and void. The court says that the duties these officials are required to discharge bear a very remote, if any, relation to the devising and applying of measures for preserving and promoting the public health, the removal or neutralization of elements injurious to health, and the practical application of sanitary science. Certainly the discharge of these duties is not necessary to the devising and applying of measures for preserving and promoting the public health. The gathering of these statistics may possibly be of some slight aid to investigators in devising methods of preserving the public health, but the court gravely doubts whether these statistics offer any help in discovering methods of preventing disease. Conceding, however, that they furnish some aid in research work looking to the discovery of means by which disease can be prevented, the court feels confident that the collection of these statistics is not such a means of providing necessary sanitation as was contemplated by the framers of the amendment to the constitution giving the power stated to provide for necessary sanitation. Clearly the purpose of the framers of the amendment, and of the people in adopting it, was to empower the legislature to authorize a county to levy a tax for the purpose of applying known and recognized methods of sanitation, such as vaccination to prevent smallpox, serums to prevent typhoid fever, diphtheria, scarlet fever, and the like, the purification of water, the destruction of the mosquito which produces yellow fever and malaria, and other well known methods of sanitation. This provision of the constitution must be given a plain, practical and commonsense construction.

Motions for a rehearing were made; but, after carefully considering them, the court does not think that a rehearing should be granted. It thinks that its decision in this case is sound. An additional reason for this is that there are county boards of health which "have full power and authority to adopt, enact, establish, and maintain all such rules and regulations, not inconsistent with the laws and constitution of this state and of the United States, as they may deem necessary and proper for protecting the health of their respective counties, and for preventing the introduction, generation, and spread of infectious and contagious diseases therein," except in incorporated cities or towns. These boards can "employ such officers, agents, or employees, and incur such expenses as they may deem necessary, which salaries, compensation, and expenses shall be paid out of the county treasury as are other county expenses." This county machinery is provided for necessary county sanitation. Then, there is a state board of health. The bureau of vital statistics is an adjunct or department of that board, which has full control of the registration of vital statistics. Under the constitutional provision involved, the court does not think that the legislature is authorized to provide for the payment of the expenses of a state department or state bureau out of county funds.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, Dallas, April 19-23. Dr. Olin West, 535 N. Dearborn Street, Chicago, Secretary.

Alabama, Medical Association of the State of, Mobile, April 27-30. Dr. D. L. Cannon, 519 Dexter Avenue, Montgomery, Assistant Secretary.

American Association for the Study of Allergy, Dallas, April 20. Dr. A. H. Rowe, 242 Moss Avenue, Oakland, Calif., Secretary.

American Association of Genito-Urinary Surgeons, Hot Springs, Va., May 10-12. Dr. H. G. Bugbee, 40 E. 41st Street, New York, Secretary.

American Association of Pathologists and Bacteriologists, Albany, New York, April 2-3. Dr. H. T. Karsner, Lakeside Hospital, Cleveland, Secretary.

American Child Health Association, Atlantic City, May 17-22. Dr. S. J. Crumbine, 370 7th Ave., New York City, Secretary.

American Gastro-Enterological Association, Atlantic City, May 3-4. Dr. John Bryant, 338 Marlborough Street, Boston, Secretary.

American Gynecological Society, Stockbridge, Mass., May 20-22. Dr. A. H. Curtis, 104 S. Michigan Ave., Chicago, Secretary.

American Orthopedic Association, Atlanta, April 26-28. Dr. De Forest P. Willard, 1630 Spruce Street, Philadelphia, Secretary.

American Proctologic Society, Indianapolis, April 16-17. Dr. William A. Rolfe, 331 Beacon Street, Boston, Secretary.

American Roentgen Ray Society, Detroit, May 18-22. Dr. C. L. Martin, Baylor Hospital, Dallas, Texas, Secretary.

American Society of Clinical Investigation, Atlantic City, May 3. Dr. J. H. Austin, University of Pennsylvania, Philadelphia, Secretary.

American Society of Clinical Pathologists, Dallas, April 15-17. Dr. Ward T. Burdick, Metropolitan Building, Denver, Colo., Secretary.

American Urological Association, Boston, May 17-19. Dr. H. G. Hamer, 723 Hume-Mansur Building, Indianapolis, Ind., Secretary.

Arizona Medical Association, Globe, April 25-27. Dr. D. F. Harbridge, 407 Goodrich Building, Phoenix, Secretary.

Arkansas Medical Society, Hot Springs, May 18-20. Dr. W. R. Bathurst, 810 Boyle Building, Little Rock, Secretary.

Association of American Physicians, Atlantic City, May 4-5. Dr. F. W. Peabody, Boston City Hospital, Boston, Secretary.

California Medical Association, Oakland, April 26-May 1. Dr. Emma W. Pope, 593 Market Street, San Francisco, Secretary.

Conference of State and Provincial Health Authorities, Atlantic City, N. J., May 21-22. Dr. Richard M. Olin, State Commissioner of Health, Lansing, Mich., Secretary.

Connecticut State Medical Society, New Haven, May 19-20. Dr. C. W. Comfort, Jr., 27 Elm Street, New Haven, Secretary.

Florida Medical Association, Gainesville, May 3-5. Dr. Shaler Richardson, 111 W. Adams Street, Jacksonville, Secretary.

Georgia, Medical Association of, Albany, May 12-15. Dr. A. H. Bunce, 65 Forrest Avenue, Atlanta, Secretary.

Hawaii Territorial Medical Association, Honolulu, April 25-28. Dr. F. J. Pinkerton, 46 Young Building, Honolulu, Secretary.

Illinois State Medical Society, Champaign, May 18-20. Dr. H. M. Camp, Lahl Building, Monmouth, Secretary.

Iowa State Medical Society, Des Moines, May 12-14. Dr. T. B. Throckmorton, Bankers Trust Building, Des Moines, Secretary.

Kansas Medical Society, Kansas City, May 4-6. Dr. J. F. Hassig, 804 Elks Building, Kansas City, Secretary.

Louisiana State Medical Society, Monroe, April 15-17. Dr. P. T. Talbot, 1551 Canal Street, New Orleans, Secretary.

Maryland, Medical and Chirurgical Faculty of, Baltimore, April 27-29. Dr. J. A. Chatard, 1211 Cathedral Street, Baltimore, Secretary.

Medical Women's National Association, Dallas, April 18-19. Dr. Lena K. Sadler, 533 Diversey Parkway, Chicago, Secretary.

Minnesota State Medical Association, St. Paul, May 17-19. Dr. E. A. Meyerding, 11 W. Summit Avenue, St. Paul, Secretary.

Mississippi State Medical Association, Jackson, May 11-13. Dr. T. M. Dye, McWilliams Building, Clarksdale, Secretary.

Missouri State Medical Association, St. Louis, May 17-20. Dr. E. J. Goodwin, 901 Missouri Building, St. Louis, Secretary.

Nebraska State Medical Association, Omaha, May 11-13. Dr. R. B. Adams, McKinley Building, Lincoln, Secretary.

New Mexico Medical Society, Albuquerque, May 19-21. Dr. C. M. Yater, 310 N. Richardson Avenue, Roswell, Secretary.

New York, Medical Society of the State of, New York City, March 29-April 1. Dr. D. S. Dougherty, 17 W. 43d St., New York City, Sec'y.

Ohio State Medical Association, Toledo, May 11-13. Mr. Don K. Martin, 131 E. State Street, Columbus, Executive Secretary.

Oklahoma State Medical Association, Oklahoma City, May 18-20. Dr. C. A. Thompson, 609 Barnes Building, Muskogee, Secretary.

Oregon State Medical Society, Portland, April 1-2. Dr. F. D. Stricker, Medical Arts Building, Portland, Secretary.

South Carolina Medical Association, Sumter, April 6-8. Dr. E. A. Hines, Seneca, Secretary.

South Dakota State Medical Association, Aberdeen, May 19-20. Dr. John F. D. Cook, Langford, Secretary.

Tennessee State Medical Association, Memphis, May 11-13. Dr. J. F. Gallagher, Jackson Building, Nashville, Secretary.

Current Medical Literature

AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

31: 1-148 (Jan.) 1926

*Dried Human Milk. V. Use in Feeding of Premature Infants. P. W. Emerson and L. W. Smith, Boston.—p. 1.
*Bacteriologic Studies of Respiratory Passages. VI. Hemolytic Streptococci in Pharynx and Tonsils of Infants and Children. I. Pilot and I. H. Tumpeer, Chicago.—p. 22.
*Enlargement of Spleen in Measles. A. Bleyer, St. Louis.—p. 26.
*Congenital Cardiac Hypertrophy: Case. A. J. Scott, Jr., and A. H. Zeiler, Los Angeles.—p. 31.
*Calcification of Subcutaneous Tissue in Child (Calcinosis Universalis): Case. G. Wilens and J. Derby, Boston.—p. 34.
*Variations in Antiscorbutic Properties of Dry Milk. G. C. Supplee and O. D. Dow, Bainbridge, N. Y.—p. 41.
*Bronchial Asthma in Children and Young Infants. A. H. Rowe, Oakland, Calif.—p. 51.
*Is Development of Carpal Centers Delayed in Rickets? L. H. Goldberger, New York, and J. Mellion, New Haven, Conn.—p. 58.
*Blood Chemical Findings During Convulsions in Acute Hemorrhagic Nephritis. K. M. Metcalf and M. Moriarty, Boston.—p. 65.
*Diphtheria Following Tonsillectomy. A. Zingher, New York.—p. 72.
*Wheal Formation in Infants and Children. I. J. D. Pilcher, Cleveland.—p. 77.
*Id. II. J. D. Pilcher, Cleveland.—p. 96.

Feeding Dried Human Milk.—A series of thirteen cases is presented by Emerson and Smith in which infants were fed dried breast milk over periods of time ranging from four to 137 days. The evidence seems to prove that dried breast milk can be utilized as a substitute for fresh breast milk, and that it is particularly indicated in the case of premature infants and those with severe intestinal intoxications, for whom fresh breast milk is ordinarily indicated but is not available. The authors believe that by very slight further modification in the method of drying, a still better product can be obtained, which would be available at all times for indicated cases.

Hemolytic Streptococci in Tonsils.—Hemolytic streptococci were recovered by Pilot and Tumpeer in large numbers from the excised tonsils of twenty-five of twenty-eight children, aged from 2 to 6 years, and from the adenoids, in six of eleven children. From swab cultures of comparatively normal throats of seventy-five children, aged from 6 weeks to 10 years, hemolytic streptococci were found in sparse numbers in thirty-six. It is evident that these organisms reside normally in the tonsils and adenoids, and that from these sources the streptococcal complication in the course of other diseases commonly arises.

Enlarged Spleen in Measles.—Observations concerning enlargement of the spleen during the eruptive stage of measles were made by Bleyer in 396 cases. Of forty-seven patients who were examined the day before the rash appeared, the spleen was enlarged in 2 per cent; of fifty-eight patients examined on the first day of the rash, 24 per cent had enlarged spleen and of eighty examined on the second day, the spleen was palpable in 43 per cent. Enlarged spleens were found in 56 per cent of sixty-two patients examined on the third day and in 52 per cent of forty-nine patients examined on the fourth day of the eruption. This enlargement of the spleen was coincidental with the eruptive stage of this disease, both as to appearance and disappearance, the greatest enlargement both as to frequency and size being noted on the third and fourth days of the rash. The severity of an attack did not affect the incidence of enlargement of the spleen.

Congenital Cardiac Hypertrophy.—A baby, aged 5 weeks, was seen by Scott and Zeiler because of gastro-intestinal disturbance, dyspnea and cyanosis. The bony thorax was prominent anteriorly, with no pathologic changes in the lungs, and the heart showed no apparent abnormality. The lower edge of the liver was down to the level of the umbilicus. A tentative diagnosis was made of a congenital heart defect. The roentgenogram showed that the heart was enlarged to the right. The baby died two weeks later. At necropsy, the heart was found to weigh 55.4 Gm., and was 6.5 cm. (2½ inches) wide. There was marked hypertrophy of the ventricular musculature. The ductus botalli and foramen ovale were closed, and all the valves were competent. The left auricle was normal in size but the right was dilated. There was no causation to explain this condition other than that it was congenital.

Calcification of Subcutaneous Tissue.—A case of multiple calcifications of the subcutaneous connective tissue and fat, apparently unassociated with fat necrosis, is reported by Wilens and Derby. There were no indications suggesting the initial lesion. There was present a variable degree of obliterating endarteritis.

Antiscorbutic Properties of Dry Milk.—Experiments are recorded by Supplee and Dow which show that as high as 80 cc. of reconstituted spray process whole milk powder per day is sufficient to protect guinea-pigs from scurvy, when either of two common basal scorbutic rations are used. The data also show that dry milk made by the Just roller process, and stored in an atmosphere of air at room temperature for two years, has an antiscorbutic potency substantially equivalent to that reported for fresh milk produced at the same time of the year. It is concluded that neither the differences in the scorbutic basal ration nor the period of storage serves as an adequate explanation for the low antiscorbutic values reported for certain milk powders.

Bronchial Asthma in Children.—Seventy-seven cases of bronchial asthma occurring in patients under 10 years of age, and thirty-three in patients between the ages of 10 and 20, are reported by Rowe. Of these, 19.1 per cent gave a history of allergy on both sides of the family, and 51.8 per cent gave a unilateral family history of allergy. Ninety-five per cent gave one or more positive skin reactions; 71.07 per cent reacted to proteins of animal emanations. Reactions to feathers were obtained in 58.2 per cent, and pollen reactions in 40 per cent. The importance of food as a cause for asthma is emphasized by the fact that 53.6 per cent gave positive reactions. Wheat and egg proteins gave reactions in 22 and 21 per cent, respectively. Vegetables gave reactions in 31 per cent. The treatment was based on the protein sensitization revealed by skin tests and history. The treatment has given complete or nearly complete relief in 68.3 per cent; marked relief in 22.7 per cent; slight relief in 6.3 per cent, and no relief in 2.7 per cent. The relief obtained has necessitated continued adherence to diet, or to freedom from animal emanation and organic dust contacts, or to desensitization to pollens or other proteins, or finally to combinations of these factors.

Development of Carpal Centers in Rickets.—Forty infants with rickets and twenty-two without rickets were studied by Goldberger and Mellion with reference to the development of carpal centers. The evidence shows that the appearance of carpal centers in infants with rickets was later than in infants free from rickets. The development of second or subsequent carpal centers in infants with rickets was delayed, compared to their appearance when rickets was absent. The development of more than two carpal centers during the first six months of life was retarded in rachitic infants compared to nonrachitic infants. Although delayed, new calcification centers appeared during the active stages of rickets. Antirachitic treatment (cod liver oil, ultraviolet rays or yolk of egg) rarely brought about a development of carpal centers within a period of two months.

Blood Chemical Changes During Convulsions.—The principal features in the case reported by Metcalf and Moriarty were the changes which the convulsions induced in the sugar and in the alkali reserve, as well as the absence of marked changes in the other blood constituents investigated.

Diphtheria Following Tonsillectomy.—Zingher holds that it is strongly advisable that preliminary nose and throat cultures

for diphtheria bacilli be taken as a routine before such operations as tonsillectomy and adenoidectomy. If the cultures are positive, a prophylactic dose of 1,500 units of diphtheria antitoxin should be injected, unless the patient has already been tested with the Schick test and shows a definite negative reaction or a negative pseudoreaction.

Wheal Formation in Children.—A study of wheal formation by the intradermal injection of codeine solution was made by Pilcher in a series of normal and sick infants and children. Wheal formation was lessened in all cases of edema studied regardless of the cause; namely, in nephritis, cardiac decompensation, leukemia, malnutrition from starch feeding, injury and in the local skin edema of serum urticarial wheals and saline infusions. Wheal formation is also lessened in certain ill defined skin infiltrations; namely, in cretinism and myxedema and in sclerema and scleredema. In nephritis without edema and in valvular and congenital heart disease without edema, even with considerable decompensation, the wheal formation is normal. In myocardial degeneration and in certain cases of severe prostration, wheal formation is diminished. A normal wheal reaction indicates an efficient circulation at the site of the wheal.

Wheal Formation in Rickets and Spasmophilia.—Pilcher states that low serum calcium and phosphorus, down to half the normal quantity, in infants with rickets or spasmophilia have no influence on the permeability of the minute vessels of the skin, as measured by the codeine wheal reaction.

American Journal of Public Health, Albany, N. Y.

16: 1-68 (Jan.) 1926

Tendencies in Public Health Administration. C. V. Craster, Newark, N. J.—p. 1.
Engineering Aspects of Oyster Pollution. R. E. Tarbett, Washington, D. C.—p. 5.
*Necessity for Changes in Ventilation Laws of United States. L. Greenburg, New Haven, Conn.—p. 13.
Rôle of Child Guidance Clinic in Mental Hygiene Movement. R. P. Truitt, New York.—p. 22.
Aids in Securing Better Registration. A. T. Davis, Dover, Del.—p. 25.
Improvements in Child Hygiene. C. H. Keene, Buffalo.—p. 29.
*Mediums for Estimation of Bacteria in Milk. J. F. Norton and M. Seymour, Chicago.—p. 35.
Year's Work in Food and Drug Field. F. C. Blanck, Washington, D. C.—p. 45.

Window Ventilation Better than Fan Ventilation.—Greenburg insists that the fan system developed on the basis of an erroneous knowledge of the need for ventilation should be abandoned (as applied to schoolrooms and auditoriums of less than seventy-five to 100 persons capacity), because it fails to produce satisfactory atmospheric conditions; because it leads to a high incidence of respiratory disease; because its first cost is excessive, and because its operation is poor and wasteful of heat. It should be superseded by the window system of ventilation with gravity exhaust which, comparatively, is highly efficient and inexpensive.

Mediums for Estimating Bacteria in Milk.—Norton and Seymour analyzed the bacterial counts obtained on five mediums from a series of samples of raw and pasteurized milk, particularly as regards uniformity of results. Veal infusion medium ranked first with meat extract agar and two dehydrated mediums second. Ayers' milk powder medium was less satisfactory. The results lead to the conclusion that standard meat extract agar, dehydrated nutrient agar and dehydrated peptonized milk agar are equally satisfactory.

American Journal of Obstetrics and Gynecology, St. Louis

10: 1-146 (Jan.) 1926

*Use of Fluids in Treatment of Hyperemesis Gravidarum. V. J. Harding and H. B. Van Wyck, Toronto, Ont.—p. 1.
*Multiple Fetal Malformation. R. G. Mills and B. E. Walpert, Chicago.—p. 10.
Application of Forceps to Transverse Head for Delivery of Persistent Occipitoposterior Cases. H. C. Williamson, New York.—p. 37.
Heart Output During Pregnancy. H. J. Stander, E. E. Duncan and W. E. Sisson, Baltimore.—p. 44.
Sterility Fertility Studies in Animals: Bearing on Human Problems. R. L. Dickinson, New York.—p. 51.
*Investigation into Causation of Onset of Labor by Parabiosis During Pregnancy. I. Kross, New York.—p. 64.
*Etiology and Epidemiology of Impetigo Contagiosa Neonatorum. D. L. Belding, Boston.—p. 70.
Elimination of Second Stage of Labor in Breech Presentations. F. C. Irving and T. R. Goethals, Boston.—p. 80.
Postoperative Parotitis: Nine Cases. T. C. Peightal, New York.—p. 88.
Obstetric Mortality in Lying-in Hospital in 1924. M. Rosensohn, New York.—p. 96.
Congenital Hernia at Linea Alba. H. R. Charlton, Bronxville, N. Y.—p. 103.
Relation of Blood Sedimentation to Pelvic Disorders. T. H. Cherry, New York.—p. 105.
Case of Decidual Reaction in Adenomyoma of Rectovaginal Septum. R. J. White, Fort Worth, Texas.—p. 112.
Case of Separation of Dorsal Vertebrae in Podalic Version and Extraction. W. R. Barney, Cleveland.—p. 116.

Treatment of Hyperemesis Gravidarum.—So important do Harding and Van Wyck consider the factor of dehydration in vomiting of pregnancy, that any such patient admitted to the wards of the Toronto General Hospital is at once treated, as a matter of routine, with 1,000 cc. of 5 per cent glucose solution in 1 per cent saline solution, given intravenously each day until diuresis is obtained. At the same time, rectal enemas of 200 cc. of 10 per cent glucose in physiologic sodium chloride solution are given three times daily, and at bedtime from 30 to 60 grains (1.95 to 3.9 Gm.) of sodium bromide are given in each enema for the first day or so. No attempt is made to feed solids by mouth, but fluids are urged even if the patient is vomiting freely, and she is encouraged and allowed to drink any liquid she may fancy, except tea, coffee, milk or cocoa. This treatment usually results, within three or four days, in such marked improvement that the patient is able to take food. It is not continued for a period longer than six days without effecting an appreciable clinical improvement.

Multiple Fetal Malformations.—A case illustrating multiple fetal malformations is reported by Mills and Walpert, which is said not to be duplicated in the literature. The chief points of interest are as follows: (*a*) Normal apparently full-term development of the upper half of the body; (*b*) absence of most of the anterior abdominal wall, its place being taken by a membrana reuniens; (*c*) abrupt termination of a relatively straight and normal spinal column at the lumbosacral junction with acute angulation, and lateral displacement of the deformed sacrum; (*d*) backward displacement and deformity of the pelvic girdle (pelvis inversa); (*e*) partial rotation and backward displacement of the buttocks, with extension of the legs up toward the occiput; (*f*) absence of one of certain paired organs and the rudimentary development of others, not all on the same side of the body; (*g*) hypoplasia of the thoracic duct; (*h*) practically complete development of the female generative tract from one müllerian duct, the other being rudimentary and widely separated; (*i*) complete development of the urinary system except for one kidney and its ureter; (*j*) persistent cloaca (failure of development of the urorectal septum); (*k*) association of a major form of fetal anomaly with placenta praevia centralis. A theory is proposed to account for many or all of the anomalies, based on an assumed congenital ascites due to a disturbance of fluid distribution occurring during growth. The incomplete development of the thoracic duct is possibly a contributing factor. An extensive bibliography gives all references to similar major malformations which could be found in the literature, together with a brief summary of the principal findings, when not mentioned in the title, and a letter indicating the library in which each has been found.

Cause of Onset of Labor.—The results of Kross' experiments show that in rats, at least, no labor inducing substances are produced during labor that have any appreciable influence on the course of pregnancy in the partner of a parabiotic pregnant pair.

Etiology of Impetigo Contagiosa Neonatorum.—Belding's observations corroborate the opinion of the previous investigators who find that a strain of *Staphylococcus aureus* of special virulence is the etiologic agent in impetigo contagiosa neonatorum. The cultural characteristics of the impetigo staphylococcus are practically the same as those of the ordinary staphylococcus.

American Journal of Tropical Medicine, Baltimore

6: 1-114 (Jan.) 1926

*Protozoiasis Occurring in Temperate Zone Residents. F. Smithies, Chicago.—p. 1.
*Effect of Temperature on Protozoan and Metazoan Parasites: Intra-Intestinal Thermal Therapy in Parasitic and Other Affections of Intestine. D. de Rivas, Philadelphia.—p. 47.
*Trichomonas Buccalis. M. J. Hogue, Philadelphia.—p. 75.
Ascariasis in Preventive Medicine. E. B. Cram, Washington, D. C. —p. 91.

Protozoiasis in Temperate Zone.—Attention is directed by Smithies to the frequency with which protozoa may be demonstrated in the stools of patients who reside in the temperate zone. In the series studied (3,780 patients), one or more species occurred in 7 per cent of patients who presented themselves for the relief of digestive disorders.

Intra-Intestinal Thermal Therapy in Intestinal Affections.—The application of intra-intestinal thermal therapy by means of colonic lavage with salt solution at from 45 to 47 C., de Rivas says, has proved an efficient and safe procedure in the treatment of amebic dysentery and the removal of seat worms and other parasites of the large intestine. The application of the method in the form of duodenal or intra-intestinal lavage by means of the duodenal tube is likewise an efficient and safe procedure for the treatment of *Giardia* (*Lamblia*) infection and the removal of tapeworms, hookworms and other parasites of the same intestine. The method may be used also for the rapid elimination of acute poisoning with mercuric chloride, botulinus, mushrooms and trichiniasis. The practicability of the method and the principle on which it is based suggest its application in the treatment of sprue, intestinal auto-intoxication, the direct implantation of any desirable bacterial flora in the intestine and the intra-intestinal administration of drugs.

Trichomonas Buccalis.—*Trichomonas buccalis* has been found by Hogue only in the mouths of persons suffering with pyorrhea, acute gingivitis or abscessed teeth.

Archives of Internal Medicine, Chicago

36: 751-896 (Dec. 15) 1925

*Antigenic Property of Pollens. H. L. Huber and K. K. Koessler, Chicago.—p. 751.
*Effect on Paramecia of Blood Serums, Especially from Patients with Carcinoma. G. A. Daland, Chicago.—p. 762.
*Diabetes: Electrocardiographic Studies. E. P. Blitzsten and D. L. Schram, Chicago.—p. 770.
*Nonspecific Desensitization Therapy in Allergic Asthma. Eosinophilic Index as Guide to Intramuscular Injection of Venom Protein. R. H. Spangler, Philadelphia.—p. 779.
*Nature of So-Called Sino-Auricular Block. W. H. Resnik, Baltimore. —p. 788.
*Identification of Three Types of Mononuclear Phagocytes in Peripheral Blood. F. A. McJunkin, St. Louis.—p. 799.
*Etiology of Chronic Ulcerative Colitis. J. A. Bargen and A. H. Logan, Rochester, Minn.—p. 818.
*Spindle-Cell Sarcoma of Heart. C. S. Beck and H. S. Thatcher, Cleveland.—p. 830.
*Quinidine in Treatment of Auricular Fibrillation, Established, Paroxysmal and Transient. F. J. Smith and N. E. Clark, Detroit.—p. 838.
*Value of Icterus Index in Differentiating Anemia. A. V. St. George and A. L. Brown, New York.—p. 847.
*Concentration of Blood and of Urine in Diabetic Toxemia. H. A. Bulger and J. P. Peters, New Haven, Conn.—p. 857.
*Diameter of Red Blood Cells in Differentiation of Anemias. L. C. Grosh and J. L. Stifel, Toledo, Ohio.—p. 874.
*Renal Function in Persons Having Only One Kidney. N. B. Foster, New York.—p. 884.
*Hyperglycemia. I. Relative Blood Volumes in Diabetes Mellitus. L. Foshay, Cleveland.—p. 889.

Antigenic Properties of Pollens.—Huber and Koessler demonstrated the antigenic property of pollens. While not itself proving the anaphylactic nature of pollen disease, this finding is believed to be highly significant for this interpretation.

Blood Serum from Carcinoma.—No specific substance was found by Daland in the blood serum of patients with carcinoma, which affected the rate of vesicle formation in paramecia in any way different from normal serum.

Electrocardiogram in Diabetes.—Studies were undertaken by Blitzsten and Schram to see in what way electrocardiographic tracings of diabetic patients differ from those of normal persons of the same age and sex. Notching of the main deflection of the electrocardiographic curves occurred more frequently in curves of diabetic patients than in curves of controls. Changes in the blood sugar concentration were associated with changes in the main deflections of the electrocardiographic tracings. Increasing the amount of blood sugar in dogs by etherization or by glucose injections caused an increase in the height of the Q-R-S wave, while a decrease in the amount of blood sugar produced a decrease in the amplitude of the Q-R-S wave.

Nonspecific Desensitization Therapy in Allergic Asthma.—Spangler cites a case which shows the clinical results of nonspecific protein desensitization following repeated intramuscular injections of venom protein (crotalin) solution in a case of bronchial asthma and hay-fever. The eosinophilic index seems to indicate that a state of antianaphylaxis has been maintained and that the patient has remained, as Spangler terms it, nonspecifically desensitized. The patient has remained entirely free from all asthmatic symptoms for eleven months.

Sino-Auricular Block.—Resnik would drop this term for "sino-auricular standstill," which is a more accurate expression of the condition as it is seen clinically.

Mononuclear Phagocytes in Peripheral Blood.—Three kinds of mononuclear phagocytes have been demonstrated by McJunkin in the circulating blood, two of which are found under normal conditions: (1) monocytes, mononuclear benzidine-positive phagocytes reacting to neutral red by the method of supravital staining; (2) lymphendotheliocytes, benzidine-negative mononuclear phagocytes that by the method of supravital staining react to neutral red (sometimes with arrangement of the dye granules in the form of a rosette); (3) hemendotheliocytes, benzidine-negative mononuclear phagocytes not reacting by the method of supravital staining to neutral red or reacting slightly to neutral red with the appearance of irregular dye cytoplasmic granules. The first two occur in human blood.

Etiology of Chronic Ulcerative Colitis.—A gram-positive diplococcus has been isolated by Bargen and Logan in 80 per cent of cases of chronic ulcerative colitis. This organism has been obtained in pure culture from the early lesions, in an acute exacerbation of the disease, from the depths of chronic ulcers, and occasionally from distant foci (tooth abscess or tonsils) elsewhere in the body. By the intravenous injection of the organism, lesions like those in human beings have been produced in rabbits and dogs, the lesions in the latter approaching the chronic stage of the disease in humans. From these studies, it would seem that the hope of control of this disease lies in (1) removal of the distant foci of infection; (2) immunization in some form against the causative organisms; (3) local and topical application and irrigation; (4) the empiric use of drugs, such as tincture of iodine; (5) the administration of some absorbent like kaolin by mouth, and (6) a nonirritating yet general diet.

Spindle-Cell Sarcoma of Heart.—In the case reported by Beck and Thatcher the clinical diagnosis of sarcomatosis was made by the presence of disseminated sarcoma nodules. Involvement of the heart with sarcoma was suggested by the subnormal blood pressure, rapid pulse rate, systolic murmur and an abnormal contour of the heart as seen in the roentgenogram. This was considered as a possibility, but a definite diagnosis of sarcoma, primary in the heart, was not made clinically. The tumor was situated in the wall of the left auricle. Numerous metastases were present in the muscles and subcutaneous tissues of the buttocks, scrotum, legs, arm and chest. Thirty-five cases of sarcoma primary in the heart are now on record.

Quinidine Therapy of Auricular Fibrillation.—Smith and Clark have had success in 61 per cent of their cases in the production of normal rhythm from auricular fibrillation by a one day plan of quinidine administration. One death occurred. The chief value of quinidine was found in the treatment of frequent paroxysmal auricular fibrillation when not associated with hyperthyroidism. The authors point out that it has many dangers and an extremely limited field of usefulness in the established case, and real benefit of any

considerable duration is derived in only a small proportion of these.

Value of Icterus Index in Differentiating Anemia.—St. George and Brown have found that the icterus index, rationally interpreted by a modification of the Meulengracht method, is a distinct clinical aid in the differentiation of the anemias. Uncomplicated cases of hemolytic anemia have an index above the normal range. Uncomplicated cases of secondary anemia have a low index, generally below the normal range. Uncomplicated cases of pernicious anemia and the severe anemia simulating it in cases of carcinoma may readily be differentiated by the icterus index, in that the former has an index consistently above the normal (from 8 to 12.5) and the latter below the normal range. It is suggested that the icterus index may be used to follow the course of pernicious anemia and to determine, before the blood count falls, when it is advisable to give a transfusion, as well as when the patient is likely to improve spontaneously.

Concentration of Blood and Urine in Diabetic Toxemia.—In severe diabetic toxemia with marked dehydration of the blood, Bulger and Peters assert that the concentration of nitrogen and chloride in the urine is extremely low. With adequate treatment there is a rapid dilution of the blood and a rapid increase in the concentration of these substances in the urine. There is no direct relationship between the alterations in the blood and the urine and none of the changes appear to be significantly affected by the presence or degree of hyperglycemia or glycosuria.

Diameter of Red Blood Cells Differentiates Anemias.—A technic is described by Grosh and Stifel for the measurement of the diameter of red blood cells and for the construction of diameter curves, which is sufficiently accurate for clinical purposes and sufficiently simple to be used in a routine manner in examining any questionable blood spread. The diameter curves have been found of value in the differentiation of Addison's anemia in all its stages and of secondary anemia.

Renal Function with One Kidney.—Foster states that the decrease in renal tissue in a person with one kidney is only doubtfully revealed by kidney function tests when the findings are compared with those of a normal subject. The only test that shows consistently that there is a limitation of function is the ratio after giving urea. While the results of study of persons with only one kidney emphasize the limitations of diagnostic methods in the recognition of nephritis, they also suggest that caution must be exercised in endeavors to estimate the amount of tissue capable of function.

Relative Blood Volumes in Diabetes Mellitus.—Diabetes mellitus produces marked changes in water distribution and in the total water balance of the body. The degree of these changes, according to Foshay, is modified by the magnitude of the hyperglycemia and by the rate of onset. Their character is modified by vascular disease and renal permeability. Reduction of hyperglycemia (or the action of insulin) may produce either an increase or a decrease in the concentration and viscosity of the blood. The result in any given case depends on the antecedent water content.

Atlantic Medical Journal, Harrisburg, Pa.

29: 201-283 (Jan.) 1926

*Nephritis in Children. S. W. Clausen, Rochester, N. Y.—p. 201.
Problem of Syphilis in Surgical Diagnosis. J. H. Stokes, Philadelphia.—p. 205.
Important Landmarks in Late Congenital and Acquired Syphilis. G. J. Busman, Pittsburgh.—p. 210.
Early Diagnosis of Syphilis. J. V. Klauder, Philadelphia.—p. 214.
Symposium on Uterine Bleeding: Adolescent Hemorrhage. B. Z. Cashman, Pittsburgh.—p. 222.
Uterine Hemorrhage Complicating Pregnancy. E. A. Schumann, Philadelphia.—p. 224.
Hemorrhage of Advanced Menstrual Life Not Due to Malignancy. S. A. Chalfant, Pittsburgh.—p. 227.
Hemorrhage from Carcinoma, as Distinguished from Postmenopause Bleeding. C. C. Norris, Philadelphia.—p. 231.
*Diabetes in Eight Members of Family, with Six Deaths in Coma. R. A. Kern, Philadelphia.—p. 234.
Diabetic Coma, with Gangrene of Foot Treated Intensively with Insulin in Patient's Home. J. W Ellenberger and C. R. Phillips, Harrisburg.—p. 235.
*Recurrent Auricular Fibrillation Rationed on Quinidine Sulphate. J. E. Talley, Philadelphia.—p. 236.
Pellagra in Pennsylvania. C. E. Irvin, Danville.—p. 237.
*Syphilitic Cirrhosis of Liver in Boy of Fifteen. A. J. Simpson, Chester.—p. 238.
*Hemochromatosis. C. C. Hartman, Pittsburgh.—p. 239.
*Radical Cure of Simple Obesity by Dietary Measures Alone. F. A. Evans, Pittsburgh.—p. 240.
Case of Infectious Mononucleosis. C. W. W. Elkin, Pittsburgh.—p. 241.
Mastoid Cases. D. Macfarlan, Philadelphia.—p. 242.
Thrombo-Angiitis Obliterans in Negro. W. G. Gemmill, York.—p. 244.
Responsibility of County Society for Promotion of Health Examinations. E. B. Edie, Uniontown.—p. 245.

Nephritis in Children.—In the 102 cases of glomerular nephritis in children reviewed by Clausen, infections played a prominent rôle in the causation. Chronic upper respiratory infections caused 33 cases; scarlet fever, 26; acute upper respiratory infections, 12; acute mastoiditis, 5; pneumonia, 10; diphtheria, 4, and chronic sinus infections, 4. There were 21 deaths in this group: from uremia, 10; pneumonia, 4; sepsis, 4; cardiac failure, 2, and pertussis, 1. As to treatment, if infection plays an important rôle in nephritis, eradication of the infection is indicated. In glomerular nephritis, the infection is usually an acute self-limited streptococcic infection. When it subsides, the patient recovers, often in spite of the treatment. When chronic focal infection exists, the question of operation naturally arises. Clausen has not seen any case cured by nasal sinus operations, but has seen benefit following removal of infected tonsils and teeth. Clausen has discontinued purgation and hot packs, has paid attention to infection, and has used diets considerably richer in protein and calories than before. Of twenty-eight cases of tubular nephritis, thirteen patients died. Sinus infection was certainly the cause of the disease in thirteen cases and probably so in four others. One point in treatment is stressed—not to limit the diet in these cases. The most striking benefit is seen when the causative nasal sinusitis can be cured. This can occasionally be accomplished by means of irrigations of the nares with alkaline salt solutions (sodium chloride, 0.75 per cent; sodium bicarbonate, 0.75 per cent). Instillations of mercurochrome, 1 per cent, appear to have benefited one patient.

Familial Diabetes.—Kern's patient, a Jew, aged 35, gave a familial history of diabetes. Three sisters, aged 17, 19 and 23, respectively, died in diabetic coma. In each instance the illness lasted only a few months. The patient's mother died in diabetic coma at 32, after an illness of two years. Her brother and one sister died in coma at about 40, each having been ill for several years. The remaining sister, now in her fifties, was also diabetic. Of the history of his grandparents the patient knew nothing, nor of the children of his mother's siblings. None of his father's family was diabetic. The patient's two children were living and well.

Quinidine Sulphate Ration in Auricular Fibrillation.—Talley relates the case of a woman, aged 52, who had auricular fibrillation and who kept very comfortable by taking a certain amount of quinidine sulphate every day. At present she is taking 6 grains (0.4 Gm.) of quinidine sulphate at 10 a. m. and at 10 p. m. to maintain a regular rhythm. Quinidine has rendered the pulse regular and kept her free from pain—an unusual complication in auricular fibrillation—and has abolished the recurrent attacks of acute fibrillation with rapid rate. In two other patients the maintenance of a regular rhythm by such a ration of quinidine regularly serves to keep the patients edema free.

Syphilitic Cirrhosis of Liver in Boy.—Congenital syphilis was the cause of the cirrhosis in Simpson's cases. The boy's father had died two years before with a diagnosis of syphilis, and the entire family—mother, sister and one brother—gave positive Wassermann reactions. The brother was a neurosyphilitic with marked dementia. Congenital syphilis in the patient was diagnosed at 8 years of age, when he had a sore mouth and was blind for two months, but improved under treatment. Two years later, he developed marked ascites, and 4,500 cc. of fluid was obtained by paracentesis. He was given a course of neo-arsphenamine and mercury and improved enough to enter the public school, but he was in bad shape. He appeared at first to respond to treatment, but developed epileptiform convulsions, passed into coma and died.

Hemochromatosis.—Pain was the chief complaint in Hartman's case. Physical examination showed unusually good nutrition, pale skin, atrophic rhinitis, and thyroid fulness, but nothing else of importance. The urine was very highly colored. The urinary pigments were not investigated. An attempt at biliary drainage caused hemorrhage from the biliary tract (?). The terminal period was marked by abdominal pain, nausea, vomiting, fever, hematemesis, prostration, anemia, petechial hemorrhages, and ecchymotic patches of the skin. There was a marked iron reaction of the tissues. There was no appreciable pigmentation of the skin or enlargement of the superficial lymph glands. A culture from the heart's blood was sterile. The condition was not recognized during life.

Diet Cure of Obesity.—The treatment in Evans' case consisted of diet alone. It was arrived at by calculating a diet for the patient's ideal weight, consisting of 1 Gm. of protein and 30 calories per kilogram, and such an amount of carbohydrate and fat that the ketogenic-antiketogenic ratio was 1.5:1. The menu was made up from these figures, eliminating as much of the fat as possible. This resulted in protein, 66 Gm.; carbohydrate, 79 Gm.; fat, 38 Gm.—a total of 922 calories each twenty-four hours. This was 14 calories for the ideal weight, 65 pounds (29.5 Kg.). She was given 10 grains (0.65 Gm.) of sodium bicarbonate twice a day.

Boston Medical and Surgical Journal

194: 191-232 (Feb. 4) 1926

*Embolic Gangrene of Extremities in Pneumonia. E. D. Kiefer, F. G. Brigham and R. R. Wheeler, Boston.—p. 191.
Vital Capacity in Hyperthyroidism: Two Thousand and Two Hundred Observations. I. M. Rabinowitch, Montreal.—p. 199.
*Ultraviolet Therapy in Pediatrics. E. T. Wyman, Boston.—p. 202.
Room for Treatment with Ultraviolet Rays. E. T. Wyman, Boston.—p. 205.

Diabetes Mellitus; Gangrene; Pneumonia.—Kiefer, Brigham and Wheeler report a case of sudden infarction of the entire left foot occurring in a 19 year old boy, who was in diabetic coma complicated by pneumonia. The circulation did not return, and the condition went on to frank gangrene. Two days later the terminal phalanx of the fifth finger on the left hand suddenly became cold and black. However, the circulation gradually returned and almost all evidence of the infarction had disappeared within three days. The only evidence of pneumonia was a high temperature complicating the diabetic coma. However, within four days the boy developed a perfectly typical clinical picture of lobar pneumonia of the right base. Death occurred on the sixth day. Fifty-two cases from the literature are reviewed.

Ultraviolet Therapy in Pediatrics.—Wyman has found ultraviolet therapy a specific in treating rickets and tetany and a valuable therapeutic agent in treating tuberculosis of the mesentery and bronchial glands and tuberculous peritonitis.

Colorado Medicine, Denver

23: 41-74 (Feb.) 1926

"White Bile" (Hydrops of Bile Ducts). L. Freeman, Denver.—p. 45.
William Crawford Gorgas. J. N. Hall, Denver.—p. 49.
Differential Diagnosis of Functional and Organic Diseases of Nervous System. T. B. Throckmorton, Des Moines, Iowa.—p. 54.
Treatment of Mental Disorders. R. P. Smith, Sheridan, Wyo.—p. 63.
Early Medical History of Wyoming. A. B. Hamilton, Laramie, Wyo.—p. 66.
Psychopathology. L. H. Ziegler, Rochester, Minn.—p. 67.

Florida Medical Association Journal, St. Augustine and Jacksonville

7: 176-205 (Jan.) 1926

Rôle of Calcium. C. F. Arroyo, Tampa.—p. 176.
Duval County Hospital. R. H. McGinnis, Jacksonville.—p. 180.
Roentgen Diagnosis and Bronchoscopic Treatment of Lung Abscess. W. J. Knauer and W. McL. Shaw, Jacksonville.—p. 183.
Study of Accessory Nasal Sinus Disease. L. C. Ingram, Orlando.—p. 187.
Uterus Acollis with Atresia. S. R. Edwards, Miami Beach.—p. 190.
Looking Backward Over Fifty Years of Health Work in Florida. J. Y. Porter, Key West.—p. 190.

Journal of Bacteriology, Baltimore

11: 1-74 (Jan.) 1926

Dynamics of Toxicity: Theory of Disinfection. I. S. Falk and C. E. A. Winslow, New Haven, Conn.—p. 1.
*Viability of Bacterium Typhosum in Ice Cream. M. J. Prucha and J. M. Brannon, Champaign, Ill.—p. 27.
Spirochetes of Termites. S. R. Damon, Baltimore.—p. 31.
Clostridium Flabelliferum: Putrefactive Anaerobe with Brush-Like Sporangia. W. S. Sturges and G. F. Reddish, Richmond, Va.—p. 37.
Multiplication of Yeasts and Yeast-Like Fungi in Synthetic Nutrient Solutions. F. W. Tanner, E. E. Devereux and F. M. Higgins, Urbana, Ill.—p. 45.
Variations in Descendants of Single Diphtheria Bacillus. M. J. Crowell, Providence, R. I.—p. 65.

Viability of Typhoid Bacillus in Ice Cream.—Two years and four months after their introduction into ice cream, living typhoid germs were still found by Prucha and Brannon in tested samples. The temperature in the hardening room fluctuated between 8 F. below zero and 8 F. above, but for the most part it was about 4 F. above. The ice cream was prepared, Jan. 11, 1922, and was held under the foregoing conditions until all was used up by sampling, the last sample being taken, May 20, 1924. Samples for bacteriologic examination were taken from the mixture just before it was frozen, from the freshly frozen cream, and then at varying intervals during the two years and four months of storage. The original bacterial count made just after freezing was 51 million germs per cubic centimeter; at the end of the second year the count was 6,300.

Journal of Experimental Medicine, New York

42: 747-922 (Dec. 1) 1925

Immunizing Antigen of Pneumococcus. III. W. A. Perlzweig and C. S. Keefer, Baltimore.—p. 747.
Tissue Changes Following Deprivation of Fat-Soluble A Vitamin. S. B. Wolbach and P. R. Howe, Boston.—p. 753.
Alveolar Pores of Pneumonia. W. S. Miller, Madison, Wis.—p. 779.
*Skin Reactions to Alternate Heat and Roentgen-Ray Exposures. J. A. Hawkins and H. Clark, New York.—p. 785.
*Experimental Rickets. I. Rickets in Young of Rabbits Infected with S. Japonicum. R. Kawamura and Y. Kasama, Nigata, Japan.—p. 793.
*Etiology of Herpes Zoster. R. Cole and A. G. Kuttner, New York.—p. 799.
*Bacteriophage of d'Herelle. IV. Concerning Oneness. J. J. Bronfenbrenner and C. Korb, New York.—p. 821.
*Relation Between Tumor Susceptibility and Heredity. II. Tar Tumor Incidence. C. J. Lynch, New York.—p. 829.
Serologic Studies on Blood Primates. K. Landsteiner and C. P. Miller, New York.
* I. Differentiation of Human and Anthropoid Bloods.—p. 841.
* II. Blood Groups in Anthropoid Apes.—p. 853.
*III. Distribution of Serologic Factors Related to Human Iso-Agglutinogens in Blood of Lower Monkeys.—p. 863.
*Leptospira Hebdomadis and Akiyami. S. Shiozawa, M. Koshina and O. Kitayama, Tokyo, Japan.—p. 873.
*Influence of High Protein Diet on Kidneys. A. J. Miller, Boston.—p. 897.

Skin Reactions to Heat and Roentgen Ray.—Different areas on the abdomen of the same guinea-pigs have been exposed by Hawkins and Clark to suberythema doses of soft roentgen rays, to heat of intensity below the critical dose for the production of burns, and to both radiations in sequence. The only effect of exposure to roentgen ray or heat alone was a slight scaling of the skin. The results were the same no matter in which sequence the agents were applied.

Parasitic Disease in Mother and Rickets in Offspring.—Observations made by Kawamura and Kasama show that young rabbits born of mothers affected with *Schistosomum japonicum* develop typical rickets. Rickets can also be produced if young, healthy rabbits are infected. It is natural to suppose that the rachitic changes are caused by the parasite itself. Since, however, a similar disease can be produced in the offspring when the mother is fed on egg yolk, the causation is not limited to the action of this parasitic toxin alone.

Etiology of Herpes Zoster.—Attempts made by Cole and Kuttner to inoculate rabbits, guinea-pigs and monkeys with material obtained from nine cases of herpes zoster proved unsuccessful.

Concerning Oneness of Bacteriophage.—Lytic filtrates active against *B. dysenteriae* Shiga, *B. coli*, *B. pestis-caviae* and staphylococcus, respectively, proved to be differently

affected by changes in hydrogen ion concentration. Bronfenbrenner and Korb are of the opinion that, as these differences in individual resistance persisted, notwithstanding the repeated passage of lytic filtrates through cultures of bacteria other than those against which they were primarily active, the fact seems to offer evidence in favor of a multiplicity of bacteriophages.

Tumor Susceptibility and Heredity.—Lynch reports that two strains of mice, one with a high, the other with a comparatively low, incidence of spontaneous tumors of the mammary gland, when painted between the shoulders with coal tar extract, developed tar tumors with about practically identical frequency. No hereditary differences in the response of the skin to tar painting were demonstrable in two strains of mice manifesting markedly different percentage incidences for spontaneous mammary growths. Mice from which spontaneous mammary tumors had been removed were treated with tar. The percentage incidence of the resulting tar tumors was similar to that met with in the controls, except, possibly, in the case of such animals as showed a recurrence of the spontaneous growth. In them the development of tar tumors seemed to be delayed and possibly prevented. The numbers involved are too small to be conclusive.

Differentiation of Human and Anthropoid Blood.—The serologic differences between man and the lower monkeys appear to be no greater than those between the anthropoid apes and the lower monkeys. These findings confirm the opinion that the anthropoid apes do not rank in the genealogic tree between lower monkeys and men.

Blood Groups in Anthropoid Apes.—The bloods of twenty-one anthropoid apes were examined serologically by Landsteiner and Miller. It was found possible to assign each to one of the four human blood groups. The iso-agglutinogens of the anthropoids were found to be identical with those of human blood. These very same factors could not be demonstrated in the blood of the lower monkeys. In the blood of fourteen chimpanzees examined, only the iso-agglutinogen A has been found, whereas both A and B were present in the blood of six orangs. The significance of these findings for the knowledge of the human blood groups is discussed.

Special Serologic Factors in Blood.—Serologic studies on the bloods of thirty-six species of lower monkeys have shown that there exists a correspondence between the distribution of a certain hemagglutinogen and the place of the species in the zoological system. It would seem from these findings that a genus, perhaps even a family, of animals may be characterized by a special serologic factor. The factor found in the lower monkeys is not identical with the one in the erythrocytes of the anthropoid apes and man.

Akiyami Caused by Leptospira.—From the results of an etiologic study of the disease known as akiyami, which prevails in the Shida district of Shizuoka province, Koshina, Shiozawa and Kitayama conclude that akiyami is an infectious disease caused by a leptospira. The leptospira causing akiyami is very difficult to differentiate morphologically from *L. icterohaemorrhagiae* and *L. hebdomadis.* The strains of leptospira isolated from cases of akiyami are of two types. One type, isolated from three of sixteen cases, is highly virulent for guinea-pigs and is serologically distinct from *L. icterohaemorrhagiae* and *L. hebdomadis.* It is termed the A type. The type obtained from the other cases is less virulent for guinea-pigs and is serologically identical with *L. hebdomadis.* This is termed the B type. The field mouse (*Microtus montebelli),* which harbors *L. hebdomadis,* has also been found to harbor the A type of akiyami.

Influence of High Protein Diets on Kidneys.—Seven groups of rats were fed by Miller on diets containing protein varying in amount from 1.36 to 40.13 per cent derived mainly from grain, casein, meat and milk with carbohydrate, fat and vitamins. From a number of animals one kidney was removed to double the load on the remaining one. The time of feeding was from nine weeks to six months. Blood uric acid, blood urea nitrogen determinations, and microscopic examinations of the kidneys revealed no evidence of kidney damage. There was evidence of kidney hypertrophy, consisting of increased weight of the kidney, large diameters of the capillary tufts, convoluted tubules, and kidneys in the animals receiving high protein diet. The nephrectomized animals that ate high protein had no kidney changes, except hypertrophy, and this amounted to an increase in weight of an average of 0.54 Gm., or 85 per cent of the average weight of the right kidneys of the controls.

Journal of Immunology, Baltimore

11: 1-80 (Jan.) 1926

Specific Resistance as Influenced by Nonspecific Agents. W. J. Schatz, Allentown, Pa.—p. 1.
Qualitative Receptor Analysis. II. Bactericidal Serum. A. Felix and L. Olitzki, Jerusalem, Palestine.—p. 31.

Journal of Urology, Baltimore

15: 1-110 (Jan.) 1926

*Hexylresorcinol: Significance of Surface Tension in Urinary Antisepsis. V. Leonard and M. Frobisher, Baltimore.—p. 1.
*Sterilizing Urinary Tract. H. H. Young, Baltimore.—p. 11.
Primary Congenital Dilatation of Ureters. J. S. Eisenstaedt, Chicago.—p. 21.
Ureteral Kinks. I. Simons, Nashville, Tenn.—p. 29.
Ureteral Stricture. G. R. Livermore, Memphis, Tenn.—p. 45.
Clinical Pathology of Ureter. R. L. McKiernan, New Brunswick, N. J.—p. 51.
Pathologic Findings in Cases Clinically Diagnosed as Ureteral Stricture. G. L. Hunner and L. R., Wharton, Baltimore.—p. 57.
Clinical Features of Eight Cases of Ureteral Stricture. G. L. Hunner, Baltimore.—p. 93.

Hexylresorcinol.—Leonard and Frobisher emphasize that the successful application of hexylresorcinol in the treatment of chronic infections of the urinary tract depends on the strict observance of four factors, all of which bear a distinct relationship to the surface tension of the urine. (1) The dosage must be adequate (0.6 Gm. three times daily). (2) The fluid intake must not be increased, for this not only dilutes the active hexylresorcinol in the urine but renders even that dilution less effective than it would be otherwise, by raising the surface tension. (3) Sodium bicarbonate must be avoided, for this drug raises the surface tension of the urine so markedly as to rob it of its bactericidal properties. (4) The course of treatment should be uninterrupted and sufficiently prolonged.

Sterilizing Urinary Tract.—Experimental and clinical work has convinced Young that mercurochrome-220 soluble may be used intravenously without fear of serious or continuous damage to the kidneys. He feels so sure of this position that he has not hesitated to give mercurochrome intravenously even when albumin, casts, pus cells and bacteria have been present in large numbers in the urine.

Laryngoscope, St. Louis

36: 1-74 (Jan.) 1926

Study of Thymus in Children of Tonsil and Adenoid Age. H. P. Mosher, A. S. Macmillan and F. E. Motley, Boston.—p. 1.
Practical Demonstration of Modern Pedagogic Methods in Training of Deaf Child. M. A. Goldstein, St. Louis.—p. 31.
Atypical Case of Acute Otitis Media. M. Metzenbaum, Cleveland.—p. 43.
New Rhinoplastic Instrument. M. Maltz, New York.—p. 54.

Michigan State Medical Society Journal, Grand Rapids

25: 49-112 (Feb.) 1926

University Hospital. H. A. Haynes, Ann Arbor.—p. 49.
Educational Function of Hospital. J. B. Herrick, Chicago.—p. 51.
University Hospital: Social and Economic Service to State. C. P. Emerson, Indianapolis.—p. 55.
Synergistic Analgesia During Labor. L. A. Chrouch, Detroit.—p. 59.
Doctor's Log. W. J. Stapleton, Jr., Detroit.—p. 68.
Congenital Heart Disease: Case. M. S. Feldman, Detroit.—p. 77.
Why Physiotherapy? A. E. Schiller, Detroit.—p. 78.

Military Surgeon, Washington, D. C.

58: 1-112 (Jan.) 1926

Organization of Technical Specialties in Time of War. Spire, Paris.—p. 1.
Standardization of Splints in A. E. F. N. Allison, Boston.—p. 7.
Contacts with Chiefs. F. A. Winter, Washington, D. C.—p. 24.
Nitrous Oxide-Oxygen Anesthesia. E. I. McKesson and F. W. Clement, Toledo, Ohio.—p. 33.
Objects of Army Medical School. H. C. Fisher, Washington, D. C.—p. 52.

Transmission of Dengue Fever by Mosquito. J. F. Siler, M. W. Hall and A. P. Hitchens, Manila, P. I.—p. 57.
Chemical Warfare. B. Aron, Chicago.—p. 61.
Sanitary Inspections of Summer Training Camps. L. L. Gardner, Washington, D. C.—p. 65.

Southwestern Medicine, Phoenix, Ariz.

10: 1-44 (Jan.) 1926

Specialists. W. Smith, Phoenix.—p. 1.
Hay-Fever. E. W. Phillips, Phoenix.—p. 4.
Hypernephroma. C. S. Vivian, Phoenix.—p. 7.
Treatment of Chronic Ulcerative Tuberculosis of Lungs. W. F. Dutton, Amarillo, Texas.—p. 11.
Diagnosis of Tuberculosis by General Practitioner. W. H. Cryer and F. D. Vickers, Deming, N. M.—p. 16.
Prevention of Diphtheria. M. K. Wylder, Albuquerque, N. M.—p. 20.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Children's Diseases, London

22: 251-328 (Oct.-Dec.) 1925

*Brain Tumors in Children: Symptomatology. M. Critchley.—p. 251.
Hypertelorism: Two Cases. E. A. Cockayne.—p. 265.
*Plantar Lines in Mental Defectives. T. Brushfield.—p. 274.
*Case of Morbilliform and Bullous Eruption with Jaundice from Phenobarbital (Luminal) in Choreic Child. F. P. Weber.—p. 280.
Granuloma with Foreign Body Giant Cells Due to Injection of Ether into Panniculus Adiposus. F. P. Weber.—p. 285.
Cystitis Caused by Ameba Histolytica and Schistosoma Mansoni. A. Panayotatou.—p. 289.

Brain Tumors in Children.—One hundred and twenty-five cases of brain tumors in children are analyzed by Critchley. These cases represent 8.2 per cent of all cases of brain tumor seen during a given period. In fifty-nine cases the tumor was situated in the pons or cerebellum, in thirty-four in the cerebrum and fourteen were classed as "pituitary or suprapituitary." The symptomatology is discussed.

Plantar Lines in Mental Defectives.—Brushfield studied the foot in 618 mongol and other varieties of mentally defective children. He noted that in degenerate persons there appears to be a tendency for the primitive condition of the sole to be reproduced, with deeper markings, and to persist for some years later, up to the fourteenth year. The oblique plantar line was found to be an almost constant character of the mongol, and its importance lies in the fact that it underlines the simian quality of so many of the mongolian features met with in this variety. The marked feature in the foot of the mongol is that he possesses, in addition to this line, a wide gap between the first and second toes. If the finger is pressed on this line it appears to come directly in contact with the head of the metatarsal on each side. As these plantar lines or folds occur so frequently and persist so late in mental defectives they should always be looked for, and when present should be regarded as a stigma.

Phenobarbital Causes Bullous Eruption.—One gram every day for fourteen days was all the phenobarbital Weber's patient had taken. Nevertheless, she developed a very severe rash on the face and body. The girl did not feel ill, in spite of the fact that she was almost completely covered from head to foot with a florid morbilliform eruption (slightly purpuric in parts), the face, about the eyes, nose and lips, being especially affected. In addition there were numerous bullae. The most striking feature of the case was that the unbroken bullae contained a deep ochre yellow serous fluid, and the macerated epidermis constituting the wall of the collapsed bullae was similarly stained. The sclerotics were not markedly jaundiced, but the serous content of the bullae was found to give a strongly positive biphasic van den Bergh reaction for bilirubin; the indirect reaction was stronger than the direct reaction. These symptoms persisted for about three weeks. Copious desquamation took place.

British Journal of Ophthalmology, London

10: 1-64 (Jan.) 1926

Reaction of Intra-Ocular Pressure to Osmotic Variation in Blood. W. S. Duke-Elder.—p. 1.
Osmotic Therapy in Glaucoma. W. S. Duke-Elder.—p. 30.
Scleral Stitch in Advancement Operations. W. D. Lawrie.—p. 35.

British Journal of Radiology, London

31: 1-44 (Jan.) 1926

*Actinomycosis of Face and Neck Treated with Radium. S. A. Heyerdahl.—p. 1.
Electrotherapeutics and Diathermy. E. P. Cumberbatch.—p. 14.
Changes in Electrically Injured Bones. S. Jellinek.—p. 23.
Sun and Artificial Light Treatment. L. Hill.—p. 25.
*Bactericidal Effect of Ultraviolet Rays. A. Eidinow.—p. 35.

Radium Treatment of Actinomycosis.—Heyerdahl reports the clinical history and results of radium treatment in twenty-one cases of actinomycosis faciei and colli, some of these very serious cases, at the Riks Hospital, Oslo, Norway. In all cases the diagnosis was confirmed microscopically. In the great majority of cases, gamma rays of radium were employed, from concentrated preparations of radium, the radium rays being filtered through 1 or 2 mm. of lead. The result of the treatment has in all cases been cure without relapse, in the majority of cases with fine cosmetic results.

Bactericidal Effect of Ultraviolet Rays.—Cultures of many bacteria and pathogenic organisms are rapidly destroyed by direct exposure to ultraviolet rays. Eidinow asserts that this bactericidal action can also occur when a very thin film of blood containing bacteria is exposed to sources of ultraviolet rays. When photosensitizers, such as eosin and hematoporphyrin, are added to bacteria, the direct bactericidal action can take place on exposure to the visible rays. The direct exposure of defibrinated blood to sources of ultraviolet rays destroys the bactericidal properties of the "irradiated blood."

British Journal of Tuberculosis, London

20: 1-60 (Jan.) 1926

*Artificial Light Treatment in Surgical Tuberculosis. G. Gauvain.—p. 1.
Principles Underlying Village Settlements for Consumptive: Papworth Village. P. C. Varrier-Jones.—p. 11.
*Effects of Strong Prevalent Rain-Bearing Winds on Commonness and Course of Phthisis. W. Gordon.—p. 20.
Workshops for Tuberculous. N. D. Bardswell.—p. 25.

Artificial Light Treatment in Surgical Tuberculosis.—Gauvain stresses the fact that while general light baths will often convey to a patient a sense of well-being and even of exhilaration—in other words, produce a marked temporary tonic effect which may be reflected in local improvement more often than not—it is not a specific but merely a transitory reaction, the benefit of which becomes later less apparent. Just as the claim that "the sun will cure all forms of surgical tuberculosis" is quite untenable and is certain eventually to dishearten many sufferers and bring discredit on those who make that claim, so undue optimism in artificial light therapy will have an inevitable reaction. It is eminently desirable to use this method of treatment in surgical tuberculosis in suitable cases, but it should be regarded merely as an adjuvant method of treatment, as often a useful aid, but in no sense as a specific treatment. Gauvain urges that artificial light treatment should be undertaken only under informed medical guidance and with full and adequate equipment, manipulated by specially trained nurses.

Effect of Winds on Phthisis.—After twenty-five years of careful research, carried out by several methods and in many areas, into the effects of strong prevalent rain-bearing winds on the commonness and on the course of phthisis, Gordon says it can be asserted confidently: (*a*) that populations exposed to these winds suffer more (often much more) from phthisis than populations sheltered from them, and (*b*) that phthisis patients living in localities exposed to these winds have a higher (often a much higher) death rate and a lower (often much lower) recovery rate than patients living in shelter from them.

British Medical Journal, London

1: 126-172 (Jan. 23) 1926

Postencephalitic Parkinsonism. Results of Belladonna Therapy. A. J. Hall and M. D. Cantar.—p. 127.
Intestinal Diverticula. E. I. Spriggs and O. A. Marxer.—p. 130.
*Hemochromogen Crystal Test for Blood. D. J. A. Kerr and V. H. Mason.—p. 134.
*Diagnostic Test in General Paresis. J. S. Harris.—p. 136.
*Somatic Origin of Malignant Disease. C. R. Crowther.—p. 137.
*Rectus Transplantation in Treatment of Ventral Hernia. H. C. W. Nuttall.—p. 138.

*Treatment of Chronic Varicose Ulcer. A. P. Bertwistle.—p. 139.
Supernumerary Breast. A. Cruickshank.—p. 140.
Malignant Thyroid Tumor of Manubrium Sterni. R. Maingot.—p. 140.
Appendicitis Complicating Gastric Ulcer. D. Diamond.—p. 140.

Hemochromogen Crystal Test for Blood.—To test for hemin crystals, Kerr and Mason prefer Sutherland's method. For the production of hemochromogen crystals, the best procedure is to use Takayama solution no. 2. In the majority of cases, especially with fresh stains, if care is exercised, there is no difficulty in obtaining hemin crystals. The hemochromogen crystal test, however, possesses certain advantages, simplicity of technic being obtained in the cold by simply adding the Takayama solution. If it is desired to heat the slide, there is no danger of overheating as there is in the case of hemin crystals. The crystals are large, easily seen and are of a very characteristic appearance and color. The nature of the crystals may be confirmed by means of the spectroscope.

Diagnostic Test in General Paresis.—Harris asserts that the acetic anhydride-sulphuric acid test on the cerebrospinal fluid in cases of general paresis is positive in almost every case (97 per cent), and hence is almost as reliable as the Wassermann reaction in this condition. It is negative in almost every other type of mental disorder, except certain cases of neurosyphilis (other than general paralysis of the insane). It is a test which can be performed with great ease and rapidity and therefore is of definite value to the clinician.

Somatic Origin of Malignant Disease.—Crowther advances the theory that malignancy is not a property of cancerous tumors but a suicidal reaction of the body to an innocent hyperplasia. The reaction is suicidal because the hyperplastic cells are really part of the body, and the specific poisons generated to destroy the tumor are almost equally poisonous to the body at large. Sarcoma probably differs in its nature from carcinoma; here the disease process seems more complex, but the essential nature of malignancy is probably the same. It follows that if the body can be led to disregard the tumor, the malignant process will stop and the patient will be cured, except that the original hyperplasia will remain. This result might be achieved by blocking the afferent nerves of the part.

Rectus Transplantation in Ventral Hernia Operation.—Nuttall advocates shortening, overlapping, or transplanting the recti as a useful adjunct in the treatment of all cases of ventral hernia. The rectus muscles are detached from the pubes and can be shortened, if required, by making a tuck; they are then sutured to the symphysis, or can be overlapped and sutured with kangaroo tendon to the pubes after holes are drilled in the bone.

Treatment of Chronic Varicose Ulcer.—Bertwistle treats these cases by applying silver nitrate to the edge of the ulcer to destroy the granulations, and then covering the ulcer with gauze, soaked in a saturated solution of picric acid or by dusting with iodoform.

Calcutta Medical Journal

20: 143-176 (Oct.) 1925

Blood Chemistry of Bengalee Students: Physiologic Normals. II. H. N. Mukjerjee.—p. 143.
Treatment of Acute Empyema. P. K. Bardhan.—p. 149.
Herpes Zoster Ophthalmicus: Two Cases. S. K. Mukjerjee.—p. 153.

Journal of Laryngology and Otology, Edinburgh

41: 1-72 (Jan.) 1926

Cerebellar Abscess. W. Milligan.—p. 1.
*Pathologic Conditions Found in Case of Deaf Mutism. A. A. Gray and S. H. Nelson.—p. 7.
*Fourteen Cases of Total Laryngectomy for Intrinsic Cancer of Larynx. L. Colledge.—p. 19.
Factors Contributing to Occurrence of Hemorrhage in Tonsillectomy. H. M. Jay.—p. 28.
*Melanoma of Hard Palate. N. Patterson.—p. 32.
Septum Operation. T. B. Layton.—p. 33.

Anatomic Changes in Hearing Apparatus of Deaf Mutes.—A deaf-mute, aged 56, died of malignant disease of the stomach. Gray and Nelson secured the temporal bones and subjected the entire hearing apparatus to a careful and minute examination. First of all, there was no evidence of any hereditary tendency to deafness or deafmutism in the patient's family history. On the other hand, the fact that the patient had a brother who was a deaf-mute would indicate that some factor (possibly syphilis) had occurred in one or both of the patient's parents which had caused deafmutism in two of the children. As to the ear itself, there had been no arrest of development of the cochlea due to a toxic lesion or other cause occurring in intra-uterine life. It is suggested that the condition in the inner ear is indicative of repair occurring at a period of fetal life when the tissues are susceptible of repair, of a degree far more complete than is possible in postnatal life. Development has again proceeded, but it has not been of the ordinary type. It resembles that of the reptile or of the bird. The development of the nervous apparatus, however, does not seem to have been interfered with, and there is no reason to doubt that the impulses have been transmitted along the nerve paths, so far as microscopic examination can give information. Owing to the abnormal development of the cochlea, these impulses have been abnormal and consequently have not been appreciated in the ordinary manner by the higher cerebral apparatus.

Results in Laryngectomy for Cancer of Larynx.—Of the fourteen cases reported on by Colledge, seven patients are alive and well without recurrence at periods of from four years to not less than one year after the operation. Three have died from recurrence. Two died from bronchopneumonia shortly after the operation, and one from embolism a month later. One died suddenly in the street six months after the operation.

Melanoma of Hard Palate.—In Patterson's patient, a woman, aged 51, the tumor was known to have been present for ten years. It was a pigmented mass occupying the greater part of the hard palate, and extending slightly onto the soft palate. Enlarged glands were palpable below the angle of the jaw on the left side. The tumor was removed from the palate by dissection; this was followed by vigorous diathermy, the result being that a large portion of the hard palate subsequently came away as a sequestrum. A few weeks later a block dissection of glands was carried out on the left side of the neck, the greater part of the sternomastoid muscle being removed. The patient was subsequently treated by roentgen ray. A year later the glands below the angle of the jaw on the right side were seen to be enlarged. They were removed. For three years there was no sign of recurrence, then a swelling was noticed over the lower part of the chest on the left side. The patient is still under observation.

Journal of Obstetrics and Gynaecology of British Empire, Manchester

32: 649-858 (Winter) 1925

*Abnormal Development of Endometrial Tissue Within Female Pelvis. S. B. Herd.—p. 649.
*Fate of Graafian Follicle in Human Ovary. W. Shaw.—p. 679.
*Fibromyoma of Uterus: Surgical Operation or Intensive Roentgen-Ray Therapy. L. Martindale.—p. 690.
Material and Methods of Gynecologic and Obstetric Clinic. W. B. Bell.—p. 720.
Technic of Suture of Uterus After Cesarean Section. B. Bell.—p. 727.
*Fibromyoma of Uterus. T. G. Stevens.—p. 729.
Large Cystic Tumor of Liver Simulating Ovarian Cyst. T. G. Stevens. —p. 731.
Estimation of Fetal Maturity by Measurements Taken After Birth. W. Adams.—p. 734.

Endometrioma.—Herd's discussion of the etiology, pathology and clinical importance of certain glandular tumors arising within the pelvis, and more especially in the uterus and ovaries, is based on a study of more than 200 specimens. It is apparent that there are many different ways in which extra-uterine endometriomas may arise.

Fate of Graafian Follicle.—Shaw asserts that only a small percentage of graafian follicles found in the ovary at birth undergo ovulation. The majority become atretic. The atretic structures derived from the follicle are the corpus atreticum, corpus candicans, corpus fibrosum and corpus restiforme.

Treatment of Fibromyoma of Uterus.—Martindale analyzes 252 cases treated either by surgical operation or intensive roentgen-ray therapy. He feels that both methods have their

uses, and the choice must be left to the gynecologist who has not only diagnosed the actual pelvic condition but has also obtained a knowledge of the physique and power of resistance of his patient.

Unusually Large Uterine Tumor.—The tumor in Stevens' case weighed 47 pounds and 5 ounces (21.4 Kg.). It was drawn out of the abdomen by means of a block and tackle, and the operation of subtotal hysterectomy was completed in thirty-five minutes. There was no postoperative shock.

Journal of State Medicine, London

34: 1-62 (Jan.) 1926

Some Problems of Natural Immunity and Prophylaxis. J. C. G. Ledingham.—p. 2.
Rôle of Medical Services in Factory. W. F. Dearden.—p. 26.
Prevention of Industrial Anthrax. G. E. Duckering.—p. 39.
Bismuth in Treatment of Syphilis. R. J. G. Parnell.—p. 49.

Journal of Tropical Medicine and Hygiene, London

29: 1-8 (Jan.) 1926

*Preservation of Insulin. E. Trocello and A. Cruto.—p. 1.
*Protection of Head Against Sun's Rays in Tropical Africa. J. F. Corson.—p. 2.
Corneal Ulcer in Malaria. R. E. McConnell and C. M. McGill.—p. 3.
Treatment of Bilharzia with Tartar Emetic. P. H. J. Lampe.—p. 4.

Preservation of Insulin.—Trocello and Cruto insist that insulin be kept in solid form because, as shown by experiments, it does not undergo any alteration at a high temperature, and can be preserved for an unlimited length of time. The cause of the difference in preservation of insulin in liquid form lies in the fact that a hydrolysis of the product causes a deterioration in its pharmacodynamic properties.

Protection of Head Against Sun's Rays.—Corson believes that there is a tendency to attach an exaggerated value to the penetrative power of the sun's rays in tropical Africa. He says that a light form of hat with good reflecting power, such as a Panama, may safely be used instead of a helmet, at least when the circumstances of daily life do not require prolonged exposure to the sun.

Lancet, London

1: 165-221 (Jan. 23) 1926

Major Problem of Puerperal Sepsis. V. Bonney.—p. 165.
*Treatment of Acute Bacterial Infections with Mercury and Mercurochrome Intravenously. L. S. Dudgeon.—p. 169.
Determination of the Basal Metabolic Rate. T. C. Hunt.—p. 172.
*Blood Transfusion: Defibrination Method. R. Platt.—p. 173.
*Blood Transfusion Apparatus. H. H. Moll.—p. 175.
Erythredema or Pink Disease: Twelve Cases. C. P. Lapage.—p. 176.
*Aneurysm of Sinus of Valsalva Bursting Externally. J. H. Sheldon.—p. 178.
*Familial Neurosyphilis with Apparently Healthy Parents. A. G. Duncan.—p. 179.

Mercurochrome in Treatment of Acute Bacterial Infections.—Dudgeon has used mercurochrome-220 soluble intravenously in 150 cases of acute bacterial infections subsequently to, or instead of, mercuric chloride, has has found it to be of definite value. Mercurochrome dissolved in saline solution hemolyzes red blood corpuscles, but in the presence of blood serum or blood plasma the hemolytic activity is considerably reduced. With washed red cells, hemolysis occurs with a dilution of 1:2,000 in saline in vitro, while Dudgeon employs for intravenous inoculations strengths of 1:200, 1:500 and 1:750 in saline solution without ill effect. He has given daily intravenous injections of mercurochrome for five days without observing any complications which could be credited to it.

Transfusion of Defibrinated Blood.—The disadvantage of transfusion with citrated blood is the frequency with which "reactions," often mild, sometimes serious or even fatal, follow the introduction of the blood. In thirty-four consecutive cases in which transfusion was done by Platt with defibrinated blood, no such reaction occurred.

Blood Transfusion Apparatus.—Moll advocates the use of record syringe needles for both the donor and the recipient.

Aneurysm of Sinus of Valsalva.—In the case reported by Sheldon, intracardial rupture of the aneurysm was prevented by the presence of a coexistent adherent pericardium, probably of rheumatic origin. The aneurysm ruptured in the midline of the sternum at the level of the sixth cartilage. The sinus of Valsalva by the anterior cusp was expanded to form a saccular aneurysm. The aorta showed patches of syphilitic aortitis but was otherwise normal.

Familial Neurosyphilis.—Duncan's patient was one of six children, and the mother had had one miscarriage at the sixth week. The patient and a brother had dementia paralytica. Another brother had headaches and a positive blood Wassermann reaction. While both parents were negative in every way, the mother's father, two uncles and two brothers died in a mental hospital.

Quarterly Journal of Medicine, London

19: 113-234 (Jan.) 1926

*Heart Failure with Normal Rhythm. J. Parkinson and A. E. Clark-Kennedy.—p. 113.
*Case of Malignant Change Developing in Tumor of Rectogenital Pouch Associated with Diffuse Infiltration of Lungs and Intense Erythremia. S. Barnes, A. P. Thomson and F. W. M. Lamb.—p. 151.
*Blood Fats in Diabetes Mellitus in Relation to Treatment. A. C. White.—p. 159.
Development of Contralateral Disease in Artificial Pneumothorax Therapy. M. Davidson.—p. 179.
*Nerve Irritation and Aortic Lesions. R. C. Shaw.—p. 203.
*Can Insulin Produce Even Partial Cure in Human Diabetes Mellitus? G. A. Harrison.—p. 223.

Heart Failure with Normal Rhythm.—One hundred unselected cases of severe congestive heart failure with normal cardiac rhythm, the patients being between the ages of 20 and 70, are described by Parkinson and Clark-Kennedy. Eighty-four patients have died and forty-eight necropsies were obtained. The pathologic condition to which failure was attributable proved to be cardiovascular hypertrophy (high blood pressure) in twenty-six, cardiovascular syphilis in twenty, chronic pulmonary disease in nineteen, chronic rheumatic heart disease in seven, acute or chronic rheumatic endocarditis in four, atheromatous coronary occlusion in four, and congenital morbus cordis in one. Apart from these cases, in two the failure was due to chronic rheumatic heart disease and high blood pressure, in two, to chronic rheumatic heart disease complicated by infective endocarditis, and in one to high blood pressure complicated by cardiovascular syphilis. In the remaining fourteen, the pathologic basis of failure was uncertain. Only seven patients in the whole series subsequently acquired auricular fibrillation; two of them had chronic rheumatic heart disease; in one case it was attributable to past rheumatic infection, and in three, apparently to the heavy administration of digitalis. Evidence is adduced showing that normal rhythm likewise persists in heart failure, due to cardiovascular hypertrophy (high blood pressure), chronic pulmonary disease, syphilitic aortic and coronary disease, and atheromatous occlusion of the main coronary arteries, as well as to congenital malformations. In these conditions the heart muscle is not primarily diseased. Evidence is also given proving that in hyperpiesia (cardiovascular hypertrophy) the blood pressure sometimes falls to normal during the progress of failure. Cases with no apparent clinical cause of failure are described and classified as "primary myocardial." Necropsy showed that in some of these the failure was due to previous high blood pressure (systemic cardiovascular hypertrophy) and in others to atheromatous occlusion of the main coronary arteries. In none of them was it due to chronic myocardial inflammation or degeneration. No example in the whole series was seen of failure with normal rhythm from nonrheumatic primary myocardial disease or degeneration. It is suggested that the pathologic basis underlying nonrheumatic auricular fibrillation is likely to be found in a generalized change in the auricular muscle, such as might result from chronic inflammation, toxemia, or diffuse coronary sclerosis. Of the patients with high blood pressure, few presented clinical evidence of renal disease. Necropsies showed that a correspondingly small minority had severe primary nephritis, though many had some degree of associated chronic interstitial nephritis. The average duration of life from the onset of edema in the eighty-four cases ending in death was only eight months.

Erythremia Caused by Rectogenital Pouch Tumor.—Erythremia of intense degree without splenic enlargement is rare, but in the case cited by Barnes, Thomson and Lamb it

was due to a diffuse growth scattered throughout the lung alveoli, and containing unstriped muscle tissue. The primary growth was a tumor of the rectogenital pouch which had been sarcomatous. This is said to be the first case of the sort on record.

Significance of Blood Fats During Treatment of Diabetes.—Data are given by White as to the reaction of the blood fats in thirteen cases of diabetes mellitus under treatment, in all of which, except two, treatment at some time was with insulin. The possible factors influencing the blood fat level are considered and the difficulty of obtaining any definite correlation between them noted. The necessity for further observation, if blood fats are to be used for prognosis, is emphasized.

Nerve Irritation and Aortic Lesions.—Experimental work done by Shaw with the idea of inducing vascular changes by irritation of nerve supply, in this instance the cardio-aortic, indicate a possible relationship between aortic disease and nervous phenomena, for example, such as occur in angina pectoris.

Does Insulin Effect Cure in Diabetes?—As a result of observations lasting from eleven to eighteen months on five selected cases of diabetes mellitus, no evidence was obtained by Harrison of even a partial remission of the disease. The daily intake of carbohydrate, protein, fat and calories remained fixed throughout. The dose of insulin was adjusted to the fixed diet according to the results of estimations of the blood sugar content. All five patients needed as much or slightly more insulin at the end of the observations as at first.

Annales de l'Institut Pasteur, Paris

39: 925-990 (Dec.) 1926

Micro-Organism of Contagious Agalactia in Sheep and Goats. J. Bridré and A. Donatien.—p. 925.
Coccidia and Coccidioses in Rabbits. C. Pérard.—p. 952.
Vaccination Against Chicken Cholera. A. Staub.—p. 962.
The Leukocytes in Relapsing Fever. E. V. Kartacheff.—p. 969.

40: 1-88 (Jan.) 1926

Methods for Increasing Antitoxin Production. G. Ramon.—p. 1.
*Hypersensitization in Tuberculosis. A. Boquet and L. Nègre.—p. 11.
Favoring Influence of Antiserums on Cultivation of Micro-Organisms. M. Nicolle and E. Césari.—p. 43.
Research on Contagious Ecthyma in Sheep and Goats. H. Jacotot.—p. 49.
Experimental Research on Anthrax. C. Hruska.—p. 62.
*Experimental Leprosy in Monkeys. J. Reenstierna.—p. 78.

Hypersensitiveness in Experimental Tuberculosis.—Boquet and Nègre inoculated guinea-pigs and rabbits with tubercle bacilli. This was followed after a certain time (Debré's ante-allergic period) by a manifest reaction of the animals to injections of tuberculin or bacilli bodies. This sensitization did not seem to be connected with the appearance of specific tubercles, as it occurred with nonvirulent tubercle bacilli, killed bacilli or their proteins, as well as with living and virulent bacilli. The hypersensitization usually coexisted with immunity, somewhat preceding the latter. In animals injected with killed bacilli, paratuberculous or avian tubercle bacilli, the hypersensitization did not seem to be accompanied by any appreciable immunity. Evidently immunity and hypersensitivity are two distinct conditions in organisms infected with tubercle bacilli.

Experimental Leprosy in Monkeys.—Reenstierna induced leprosy in five of seven monkeys inoculated with bacilli from patients with untreated leprosy. Characteristic nodules appeared after an incubation period of from thirty-seven to forty-five days; they persisted from forty to sixty-two days. One nodule still persists up to seven months since the inoculation. The clinical course and histologic aspect of the nodules were identical with those in man. Reinoculation, made about seven months after clinical recovery, showed that there was no immunity. Emulsions of these nodules, injected in new monkeys, did not induce the disease. Several colored illustrations are given.

Archives de Médecine des Enfants, Paris

29: 5-72 (Jan.) 1926

*Echinococcosis of the Lung in Children. L. Morquio.—p. 5.
Nephritis with Hypertension in a Boy. Bibent and P. Bézy.—p. 32.
Congenital Syphilis in a Tuberculous Girl. W. Mikulowski.—p. 36.
*Honey in Infant Feeding. J. Comby.—p. 46.

Hydatid Cyst of the Lung in Children.—Morquio has now a record of 112 cases of hydatid cyst of the lung in children. The disease occurred chiefly in rural districts and was more frequent in boys than in girls, but never was observed under the age of 4 years. Most of the children were from 8 to 12 years old. Sometimes it was associated with echinococcosis of the liver; in most of the cases it was primary and isolated; usually one cyst; rarely two or three, or even four. The cysts developed in one or both lungs. This suggests that the parasite may have entered by way of the respiratory tract, not always by the digestive tract. The affection may be confounded with pulmonary tuberculosis or pleurisy. The diagnosis is easy if, regardless of physical signs and hemoptysis, the general condition remains good. Roentgenograms may sometimes reveal the presence of the cyst; exploratory puncture is more valuable. The cyst developed in three or four years, gradually extending from the center of the lung to the periphery. It did not show any tendency to generalization. The cyst was expelled in most of the cases with a spontaneous vomica. Its rupture followed a trauma or general disease, especially of the respiratory apparatus. It is possible that fatigue or emotion may also induce rupture of the hydatid cyst. After the vomica the cure was manifest in 90 per cent at least, and the recovery seemed to be definite. Medical treatment is of no avail; expectant treatment should be preferred even to an operation. He cured one grave case by an artificial pneumothorax. The large cavity became rapidly obliterated.

Honey in Infant Feeding.—Comby thinks that honey, so commonly used in the old times, is now forgotten too much. He emphasizes its content in easily assimilated carbohydrates, vitamin B, calcium and iron phosphates, also formic acid. It has laxative properties, and keeps indefinitely. Therefore he recommends honey especially in infant feeding and for all children. He refers to King's account of a Swiss sanatorium, where weakly infants are fed with warm raw milk with honey. The amount of the latter is gradually increased from half a teaspoonful to a tablespoonful, twice a day. No other food is given. About 200 infants thus treated showed a marked increase of weight and hemoglobin. The tolerance for the honey was perfect.

Bulletin de l'Académie de Médecine, Paris

95: 57-81 (Jan. 19) 1926

Filtrable Forms of Tubercle Bacillus. H. Durand.—p. 75.
Increase of Insanity. R. Benon.—p. 79.

95: 83-97 (Jan. 26) 1926

The Recording of the Heart Sounds. Lutembacher.—p. 91.
Neuropathology and Emotions. G. Dumas.—p. 92.
*The Phrenic Sign in Appendicitis. M. O. Iliescu.—p. 96.

The Phrenic Sign in Appendicitis.—Iliescu calls attention to what he says is a new sign of appendicitis, namely pain from gentle pressure on the right phrenic nerve in the neck. The tip of the finger is applied to the center of the triangle formed by the two branches of the right sternocleidomastoid muscle. The sign was positive in all his 150 cases of acute or latent appendicitis. It was negative in suppurations of the adnexa, and in catarrhal salpingitis. A positive phrenic sign with right adnexitis revealed the coexistence of appendicitis. The sign was positive with gastric and duodenal ulcer secondary to appendicitis, and also in peritonitis connected with appendicitis. It disappeared under ice applied to the appendix, and reappeared with the flaring up of the disease. The disappearance of the sign was definite after operation. The tenderness may be ascribed to an ascending right lymphangitis, irritating the phrenic nerve on that side.

Bulletin Médical, Paris

40: 63-82 (Jan. 16) 1926

Erythromelalgia. C. Achard.—p. 69.
*Syphilis of Salivary Glands. R. Girard and I. Trigher.—p. 72.

Syphilitic Disease of the Salivary Glands.—Girard and Trigher report two cases of secondary syphilis with involvement of the salivary glands. There was apparently no connection with lesions of the mouth, since in one instance the buccal mucosa seemed healthy. Trismus, enlargement of the parotid glands, with or without that of the submaxillary

glands, and excessive discharge of saliva, to such an extent as to prevent sleep, were the main symptoms. Under combined neo-arsphenamine and mercury treatment the whole clinical picture subsided in a few days.

Bulletins de la Société Médicale des Hôpitaux, Paris

50: 33-62 (Jan. 15) 1926

*Syphilitic Disease of the Spine. Sicard et al.—p. 33.
*Migraine with Tetany. C. J. Parhon and G. Werner.—p. 41.
*Absence of the Xiphoid and Syphilis. Sézary et al.—p. 47.
Spontaneous Detachment of Pleural Adhesion in Course of Artificial Pneumothorax. Mme. Y. Pouzin-Malègue.—p. 52.
*Symptomatic Hemophilia. P. Emile-Weil and Stieffel.—p. 55.
Epidemic Form of Pneumonia. Armand-Delille and Vanbockstael.—p. 59.

Spinal Syphilis of Pseudotumor Form.—Sicard, Haguenau and Lichtwitz report four cases of spinal syphilis in which the lumbosacral region was affected in two, the lumbodorsal in one, and the dorsal in one. The cerebrospinal fluid in two cases was yellowish, while in the others there was an increase of albumin with lymphocytosis. Roentgenograms, under iodized oil control, revealed the presence of meningeal adhesions in the two with xanthochromia, but under specific treatment the adhesions disappeared. The pathologic signs of the cerebrospinal fluid subsided only very slowly under intensive specific treatment. The patients were from 26 to 46 years old.

Migraine Associated with Tetany.—Parhon and Werner describe a third case of ophthalmic migraine associated with tetany spasms. This patient was a woman, aged 28. The coexistence, among other signs and symptoms, of decayed teeth, pruritus, and falling out of the hair suggested a possible thyroparathyroid insufficiency, with subsequent disturbance of the calcium metabolism. There was only transient improvement under thyroid treatment. Parathyroid extract did not display any favorable effect, but this may be observed likewise in experimental parathyreoprival tetany.

Absence of Xiphoid Process and Congenital Syphilis.—Sézary, Vibert and Godel's observations include 226 children, aged from 4 to 14 years. Absence or extreme atrophy of the xiphoid process was found in 20 per cent; in 58 per cent of the children with congenital syphilis. This deformity existed also in both father and mother in one instance; in the mother alone in eleven; in brothers or sisters in five. It was more frequent in girls than in boys. It is possible that atrophy of the xiphoid process, passing from generation to generation, will finally cause its disappearance in man.

Grave Hemophilia with Jaundice.—Emile-Weil and Stieffel treated a woman, aged 27, with jaundice from gallstones and cholangeitis. Examination revealed a hemogenia-hemophilia syndrome, the coagulation time being over three days, the bleeding time about fourteen minutes. Three transfusions of 300, 350 and 250 cc. of blood were given to prepare for the indispensable operation on the common bile duct. This transformed the patient's blood; the coagulation time became gradually reduced to thirty minutes and the bleeding time to from six to fourteen minutes. The gallstone operation was then ventured, and she made a smooth clinical recovery without excessive hemorrhage. The acute and curable hemophilia was evidently symptomatic, from the infection and obstruction in the biliary apparatus. They know of two other instances of symptomatic hemophilia, one in their own experience (fatty hypertrophic cirrhosis in a tuberculous patient), and Paisseau, Ceyla and Hamburger's case, occurring in syphilis and cured by specific treatment.

Comptes Rendus de la Société de Biologie, Paris

93: 1557-1692 (Jan. 5) 1926. Partial Index

*Action of Heat on Hemolytic Blood. P. Emile-Weil and Stieffel.—p. 1560.
*Microbes in Infants' Intestines. S. Dreyfus.—p. 1566.
Rejuvenation from Vasectomy in a Dog. V. Bergauer.—p. 1575.
*Amino-Acids in Effusions. M. Loeper et al.—p. 1579.
*Sulphur in Effusions. M. Loeper et al.—p. 1580.
*Bile and the Bacteriophage. P. Caublot.—p. 1583.
*Neuromuscular Conduction and Chronaxia. M. Lapicque and C. Veil.—p. 1590.
*Bile in Inoculation with Herpes. P. Remlinger and J. Bailly.—p. 1604.
*The Alexin of Serums Kept on Ice. Pierret and Breton.—p. 1612.
*Serofloccculation and Infection. V. Georgesco.—p. 1617.
*Intradermal Reaction in Scarlet Fever. M. Ciuca and E. Manoliu.—p. 1618.
*Bile Culture for Diagnosis of Typhoid. I. Alexa and G. Munteanu.—p. 1619.
*Cholesteremia in the Insane. I. Ornstein.—p. 1622.
*The p_H of the Blood in Rats. N. Laclau and R. Rabinovich.—p. 1635.
*Calcemia and the Thyroid. M. R. Castex and M. Schteingart.—p. 1636.
*Creatine of the Muscle. A. Schwartz and A. Oschmann.—p. 1645.
*Ethylene Anesthesia. M. Nicloux and A. Yovanovitch.—p. 1657.
*Reduction of Methemoglobin and Oxyhemoglobin. M. Nicloux and J. Roche.—p. 1659.
*The Glucose of the Urine. E. Moeller.—p. 1680.
*"Insulin Complement." C. Lundsgaard and S. A. Holbøll.—p. 1687.

Action of Heating on Hemolytic Power of the Blood.—Holding the forearm for an hour in water at a temperature of 40 to 50 C. (122 F.) materially reduced the hemolytic power of the blood serum in two patients with hemoglobinuria. A ligature was applied above the elbow, as for the Ehrlich test. Emile-Weil and Stieffel believe that this influence of heat might possibly be utilized in treatment of hemoglobinuria.

Intestinal Flora of Infants Under Mixed Feeding.—The stools of breast-fed infants, given also cow's milk, contained putrefaction microbes. Their amount paralleled that of the casein in the milk. This was observed with sterilized as well as with pasteurized or merely boiled milk. Less microbes were found with condensed milk, since there is less casein than in the ordinary cow's milk. Dreyfus adds that the tolerance for cow's milk was higher in the infants above the age of 6 months.

Passage of Amino-Acids and Sulphur from Effusions into Blood.—Loeper, Decourt and Lesure noted an exaggerated amino-acid content of the blood of patients with pleurisy, corresponding to that in the pleural effusion. This was observed also with sulphur.

Bile and the Bacteriophage.—Caublot's research was made on a patient with dysentery bacilli in pure culture in the urine. A bacteriophage strain had been adapted to the bacillus; and the patient had been successfully treated. Then the bacteriophage was treated with bile and kept in ampules. The dysentery recurred after a five month's improvement. The bacillus in the urine proved to be identical with that in the first attack. Cultures of the bacillus, exposed to the conserved bacteriophage, demonstrated that the lytic property of the latter had remained unchanged. Blood cultures in typhoid are said to be more rapidly positive in the presence of bile. It is evident, therefore, that bile promotes the growth of certain bacilli, but that this action is not due to any inhibition of the lytic power of the bacteriophage.

Nerve and Muscle Conduction and Chronaxia.—Lapicque and Veil state that the speed of nerve and muscle conduction was inversely proportional to the chronaxia in leeches and earth worms, in their research.

Contamination with Herpes Virus by Digestive Tract.—An emulsion of the brain from a rabbit that had died from herpetic encephalitis was given by the mouth to rabbits. Some of the animals ingested the emulsion alone, some after ingestion of bile. Death from herpetic encephalitis occurred in ten of eleven given the emulsion and bile; only in two of eleven given the emulsion alone. The grave infection in the bile-treated animals may be ascribed to the injury of the intestinal mucosa from it.

Availability of Rabbit Serums for Fixation Tests.—Pierret and Breton relate that while guinea-pig serums kept on ice lost 60 per cent of their complement fixation power in eight days, and 90 per cent in fifteen, rabbit serums kept the same way did not change at all. Their alexin value sometimes even increased by 1 or 2 per cent. This, as well as the dilution resistance of rabbit serum, demonstrates its value for complement fixation tests.

Serum Flocculation in Infections.—Flocculation occurred in all the serums from eight patients with cerebrospinal meningitis and from eighty-five with typhoid fever, in presence of a mixture of benzoin and an extract of the specific microbe. The serum from 295 syphilitics constantly showed flocculation in presence of a mixture of benzoin with the Bordet-Ruelens antigen. The flocculation does not destroy the agglutinating property of the serum in cerebrospinal meningitis and typhoid. These facts, Georgesco states, confirm Dujarric de la Rivière, Gallerand and Roux's findings.

Intradermal Test in Scarlet Fever.—Ciuca and Manoliu studied ten strains of hemolytic streptococci isolated from the blood or pus of scarlet fever patients. Filtrated cultures of the coccus were injected intradermally in ninety-four subjects at different stages of scarlet fever, in sixty-one with other infections, and in five healthy subjects. The intradermal reaction was positive in all, except only those in a state of anergy. They conclude from this that intradermal tests with hemolytic streptococci cannot be used for diagnostic purposes. They used partly the filtrate from cultures in dextrose bouillon, partly the same fluid diluted 1,000 times. The reactions with the latter were milder.

Bile Culture in Diagnosis of Typhoid.—Alexa and Munteanu aspirated the bile and used it for cultures, in thirty typhoid patients or convalescents. The results were positive in twenty; in ten during the disease, in eight convalescents, and in two clinically recovered. In the latter, the blood culture, and the serodiagnosis as well as examination of stools and urine were negative. Therefore the diagnostic use of the duodenal tube may be especially indicated in cases of typhoid carriers, in which other bacteriologic methods fail to reveal the bacillus.

Cholesteremia in the Insane.—Ornstein found an exaggerated amount of cholesterol in the blood of patients with chronic alcohol intoxication or mental confusion; less in senile dementia, pellagra, emotional psychoses and general paresis. The amount of cholesterol was reduced in the feebleminded, and in epilepsy and dementia praecox.

The p_H of the Blood in Rats with Sarcoma.—Laclau and Rabinovich's purpose was to determine the hydrogen ion con centration of the blood in rats with transplanted sarcoma. The tumor did not seem to influence the reaction of the blood.

The Calcium of the Blood and the Thyroid.—Castex and Schteingart did not observe any relations between the calcium of the blood and an increased or reduced functioning of the thyroid in their twenty-four cases. The disturbances from calcemia are probably due to changes induced in the vagosympathetic system.

Creatine of the Muscle and the Muscle Tonus.—Schwartz and Oschmann noted that the creatine content in striated muscles of frogs was neither decreased during atony nor increased during contraction.

Distribution of Anesthetics in the Blood.—Nicloux and Yovanovitch induced anesthesia of dogs with ethylene. There was evidence that from 70 to 80 per cent of the anesthetic was fixed in the blood corpuscles, and from 20 to 30 per cent in the plasma. This affinity for the blood corpuscles testifies that ethylene is a general anesthetic.

Susceptibility of Methemoglobin and Oxyhemoglobin to Reducing Agents.—Nicloux and Roche conclude that oxyhemoglobin is more susceptible to the reducing action of sodium hydrosulphite than methemoglobin.

The Glucose of the Urine.—Moeller recalls Lundsgaard and Holbøll's statement that the glucose in the blood of healthy persons is in the form of "neo-glucose"; in grave diabetes it is in the form of alpha-beta glucose; in mild diabetes both glucoses are present. Analysis of the urine in three cases of grave diabetes and six of the mild form indicated that neo-glucose and alpha-beta glucose are both eliminated by the kidneys.

Presence of Insulin Complement in Animal Muscle.—Lundsgaard and Holbøll found in the muscle of animals a substance or principle transforming alpha-beta glucose into neo-glucose, in the presence of insulin. They call it "insulin complement."

Paris Médical

59: 101-116 (Jan. 30) 1926

The Syphilitic Chancre. Milian.—p. 101.
*Hysteria with Convulsions or Epilepsy. A. Rouquier and H.-J. Vuillaume.—p. 104.
Malignant Lymphocytoma of Mediastinum. Liégeois and Foulon.—p. 110.
*"Mental Prophylaxis" and Family Placement. A. Rodiet.—p. 114.

Hysteria and Epilepsy.—Rouquier and Vuillaume discuss the differential diagnosis of convulsions in hysteria and their association with true epilepsy.

Mental Hygiene and Prophylaxis.—Rodiet describes the workings of Toulouse's consulting service for the mentally sick and the service for securing a home in some family for convalescents from mental disease after dismissal from institutions. The majority of such patients are of country origin, and the family placement service was organized in a rural district (Lurcy). The patients agree to remain for three months at least, and they are provided with work on the farms and are encouraged to settle down permanently in the country. They are under supervision of some retired farmer who helps them to become self-supporting in time. Their board is paid by the state. If the local physician finds a tendency to a relapse or acute exacerbation, there are infirmaries and an asylum in the district, all linked in an extensive system for care of the insane, to relieve the institutions at Paris acutely overcrowded since the war. The family placement system was introduced in this district (Dun and Ainay) in 1893, and this extension of open door or free family placement completes the system of mental dispensaries in the city, providing a home for these uprooted beings. The address of the Société de patronage des aliénés guéris is 75, rue du Château-des-Rentiers, Paris.

59: 117-140 (Feb. 6) 1926

The Microradioactivity of the Potassium Element in Biology. H. Zwaardemaker.—p. 117.
*Roentgenotherapy for Surgical Tuberculosis. L. Edling.—p. 127.
Necrosis of Jaw from Radioactive Substances. A. Lacassagne.—p. 132.
*Roentgen-Ray Treatment of Sterility. H. Caufman.—p. 135.

Roentgen-Ray Treatment of Surgical Tuberculosis.—Edling states that a cure was realized under roentgenotherapy in 73 per cent of 270 cases of enlarged glands, and 14.8 per cent were improved. Excellent results have been published by others with roentgen treatment of shoulder and elbow joints, but conditions are less favorable for it in the knee and ankle.

Roentgen Ray in Treatment of Sterility from Ovarian Disturbance.—Caufman treated a woman, aged 27, with irregular menstruation, amenorrhea alternating with metrorrhagia. The patient had been married for eighteen months, without conception. Roentgen rays were applied on two successive days; half a superficial skin dose for each ovary. The lumbosacral region was exposed as well as the abdomen, from navel to pubis. The treatment was followed by three normal menses; then pregnancy. The abnormal menstruation in this instance was evidently due to abnormal relations between the ovarian and uterine functioning. Here the roentgen ray may prove effectual, while it is contraindicated in primary amenorrhea or atrophy of the ovary, of infectious origin.

Presse Médicale, Paris

34: 97-112 (Jan. 23) 1926

*Thrombosis of the Auricle. G. Aubertin and G. Rimé.—p. 97.
Forensic Medicine and Psychanalysis. Minovici and Westfried.—p. 98.
*Cerebrospinal Meningitis. J. Chalier and Schoen.—p. 99.
Fistulas After Appendectomy. R. Bonneau.—p. 101.
The Social Significance of Surgery. T. Tuffier.—p. 107.

Diagnosis of Thrombosis of Left Auricle.—Aubertin and Rimé describe the clinical syndrome which suggested obliteration of the left auricle in their two cases. It included cyanosis of the toes, fingers and nose, feeble pulse, very faint oscillometer record, and absence of the first heart sound, as well as dyspnea and arrhythmia. The dilatation and consecutive insufficiency of the left auricle had induced formation of blood clots which, gradually increasing, finally filled up almost the whole auricle, thus obstructing the mitral orifice. Notwithstanding the agonal clinical picture, the course was relatively slow, death occurring in one instance after nine days; in the other after five.

Cerebrospinal Meningitis with Meningeal Hemorrhage.—In Chalier and Schoen's two patients the cerebrospinal fluid looked like plain blood. These were cases of meningococcus epidemic cerebrospinal meningitis. Antiserum treatment, not begun until late, did not prevent the fatal outcome in a few weeks. Favorable results may be expected from early and intensive administration of antimeningococcus serum. Lumbar puncture with intraspinal injection of 30 cc. of the serum is indicated twice a day, combined with 30 cc. by the vein.

34: 113-128 (Jan. 27) 1926

*Mechanism of Paroxysms in Angina Pectoris. D. Daniélopolu.—p. 113.
*Grafting in Knee Joint Disease. D. de Frenelle.—p. 117.
Anaphylaxis and Menstruation. H. Vignes.—p. 119.

Pathogenesis and Surgery of Angina Pectoris.—Daniélopolu ascribes the paroxysms of angina pectoris to a disproportion between the work of the heart and its blood supply. This may be induced by an effort as well as by lesions of the coronaries or aorta. Fatigue of the heart favors formation of toxins which stimulate the sensory fibers of the myocardium, inducing a pressor reflex of the heart and aorta. This reflex accelerates the heart contractions and raises the blood pressure, entailing a continuous increase of the toxins—a pressor reflex vicious circle—until the characteristic pain occurs. He advises surgical division of certain sensory fibers of the heart and aorta—the ones that conduct this reflex—while the accelerators and the stellate ganglion should be respected.

Bone Transplantation in Knee Joint Disease.—Dupuy de Frenelle uses a bone implant for treatment of knee joint disease in adolescents. Two grafts, taken from the tibia, are implanted laterally beneath the periosteum, after resection of the diseased bone. He gives a detailed description of the technic with nine illustrations.

34: 129-144 (Jan. 30) 1926

Danger of Inoculation of Chest Wall in Puncture of the Pleura. Tixier and Pollosson.—p. 129.
Carbon Dioxide Snow in Skin Diseases. L. Lortat-Jacob and P. Legrain.—p. 131.
Pathogenesis and Treatment of Volkmann's Disease. J. Sénèque.—p. 133.
The Distribution of Tuberculosis in the World. S. Abbatucci.—p. 139.

34: 145-160 (Feb. 3) 1926

*Intraspinal Anesthesia. T. Jonnesco.—p. 145.
The Duodenal Tube in Gastroduodenal Disease. Chabrol et al.—p. 147.

Technic for Intraspinal Generalized Anesthesia.—Jonnesco has used exclusively intraspinal anesthesia in 6,200 operations within the last eighteen years. He states that there was no fatal outcome or any untoward complications. He ascribes these excellent results to the technic employed. Stovaine, mixed with caffeine and sodium benzoate, is injected with a very thin needle. He injects in a cervicodorsal puncture, for a high operation, from 0.03 to 0.06 Gm. of stovaine, 0.50 Gm. of caffeine and from 0.65 to 0.70 Gm. of sodium benzoate, in 2 cc. of sterilized water. In dorsolumbar puncture for abdominal operations, he injects in 1 cc. of water from 0.04 to 0.08 Gm. of stovaine, 0.20 Gm. of caffeine, and 0.30 Gm. of sodium benzoate. In operations on the thorax, the dose is fractioned and injected with two punctures at the high and the middle points. In gynecologic operations, two injections, the dorsolumbar and the low lumbar are indicated, half of the solution being injected at each puncture. In cases in which postoperative retention of the urine is feared, caffeine may be replaced by strychnine. The dose of stovaine should be reduced in patients with unsatisfactory general condition.

Anales de la Facultad de Medicina, Montevideo

10: 741-816, 1925

*Classification of Meningococci. E. M. Claveaux.—p. 741.
*Visualization of the Gallbladder. P. A. Barcia et al.—p. 763.
Work in Treatment of Mental Disease. Garmendia and Darder.—p. 783.
Experimental Study of Chronic Traumatism. C. Stajano.—p. 792.

Classification of Meningococci of South America.—Of the thirty-five strains of meningococci cultivated from the cerebrospinal fluid, fifteen were from Montevideo, ten from Brazil and nine from Buenos Aires. The type most frequently found was type 3 of the American classification, then type 1. Of the French classification, type D predominated. The various tests and passages through animals confirmed that all the types closely resemble each other; they differ mainly in the agglutination property, and this is not vital. All show a mixture of different antigens, consequently Claveaux advocates a polyvalent antiserum, urging that the antiserums should be made from the largest possible number of autochthonous strains.

Visualization of the Gallbladder.—Barcia, Menéndez and Leborgne give forty-two fine roentgenograms, mostly serial, after intravenous or oral administration of tetraiodophenolphthalein, and expatiate on the instructive findings as to conditions in the upper right quadrant of the abdomen.

Archivos Lat.-Amer. de Pediatría, Buenos Aires

19: 1127-1218 (Oct.) 1925

Liver Abscess in Boy Aged 12. Navarro and Beretervide.—p. 1127.
*Pneumococcus Epidemic in the New-Born. Garrahan and Bettinotti.—p. 1133.
Influence of Disease of Upper Respiratory Passages and Lymphatics on Development of Children. Martino.—p. 1142.
Influenza with Extreme Somnolency in Children. Fernández.—p. 1155.
Radial Paralysis After Preventive Antitetanus Serotherapy. A. Carrau.—p. 1158.
*Congenital Heart Defect. Alice Armand Ugón.—p. 1163.
*Acute Chorea During Epidemic Poliomyelitis. J. M. Estapé.—p. 1166.
*Acute Encephalitis in Whooping Cough. Bonaba and Leunda.—p. 1170.
*Convulsions in Cyclic Vomiting. E. Portú Pereyra.—p. 1174.
Tetanoid-Comatose Form of Acetonemic Vomiting. V. Zerbino.—p. 1177.

Pneumococcus Infection of the New-Born.—Garrahan and Bettinotti discuss an epidemic of pneumococcus infection in six new-born infants in a period of three months at the Rivadavia maternity. Only one survived; the five others succumbed to meningitis or pneumonia in a few days. In one case a forceps injury of the eyeball was the portal of entry of the infection, the pneumococcus being cultivated from the conjunctiva. One of the mothers had influenza.

Congenital Heart Defect in an Infant of Mongolian Aspect.—Recurring attacks of cyanosis testified to some abnormal communication between the ventricles in the young infant. The attacks seem to be decreasing in frequency.

Epidemic Poliomyelitis and Chorea.—Three cases of acute chorea developed in children of about 7 in the course of a prevailing epidemic of acute anterior poliomyelitis. There was no history of febrile rheumatism, syphilis, congenital or acquired, nor degeneracy, and nothing to suggest epidemic encephalitis. By exclusion, Estapé assumes that the chorea in these cases was a manifestation of the epidemic poliomyelitis virus. He offers this as a "working hypothesis or, rather, working prosthesis."

Acute Fatal Encephalitis in Whooping Cough.—Bonaba and Leunda encountered two cases of this kind within three days. The patients were children between 2 and 3. In the course of whooping cough without complications, they suddenly developed convulsions which continued without intermission for three and eight hours until death brought relief. Influenza and epidemic poliomyelitis were prevailing at the time. Necropsy in one case revealed acute congestive encephalitis.

Cyclic Vomiting.—Portú Pereyra relates the case of a boy, aged 5, who suddenly developed intense convulsions, followed by profound coma, after eating a little fruit. Vomiting persisted for forty-eight hours. He had had two similar attacks before but none so serious. Acetone and diacetic acid were found in the urine but not in the spinal puncture fluid. He was given nothing but water and a 3 per cent solution of bicarbonate, and by the fourth day had recovered. In Mackenna's forty-five observations of acidosis in children, there was no instance of convulsions, but Zerbino reports a case of a grave tetanoid-comatose acetonemia syndrome in a child of 3. There was no vomiting and no urine, and the child died the next day.

Archiv für Kinderheilkunde, Stuttgart

77: 1-160 (Dec. 31) 1925

*Weight Curves of Infants. W. Stoeltzner.—p. 1.
Acquired Dextrocardia in Pulmonary Tuberculosis. Meyerstein.—p. 4.
Gas and Iodine Metabolism in Puberty Goiter. A. Eckstein.—p. 14.
*Spider-Web Clots in Nontuberculous Meningitis. H. Post.—p. 23.
Biology of Oxyuris. G. L. Langhans.—p. 27.
Congenital Syphilis. E. Flusser.—p. 38.
Necrotizing Inflammation of Tooth Bud. O. Bäumler.—p. 52.
*Treatment of Jaundice of the New-Born. H. Slobozianu.—p. 58.
Case of Hystero-Epilepsy. J. S. Galant.—p. 64.
Ponndorf Vaccination Against Tuberculosis. H. Weissenberg.—p. 72.
Defect in Skull Without Hernia. K. Ehrhardt.—p. 94.
So-Called Scaphoid Scapula. H. Fleischer.—p. 98.
Congenital Elephantiasis. W. Brand.—p. 101.
"Significance of Vitamins." Schmitt.—p. 104. Reply. Reyher.—p. 114.
Action of Minerals and Vitamins. E. Müller.—p. 122.

Weight Curves of Infants.—Stoeltzner points out that the weight of infants does not increase regularly, which is especially evident, when recorded daily. A decrease of 5 Gm. is frequent and is not abnormal, if the increase averages 25 Gm. The change of weight is only the result of the two divergent tendencies. Consequently the actual gain in weight is always smaller than the tendency to gain. The latter, as well as the tendency to lose, may be estimated better by taking the average of the daily (instead of weekly) gain or loss. Both tendencies are independent. Undernourishment inhibits usually only the gaining tendency, if it does not last long. In nutritional disturbances of a moderate degree, both tendencies are exaggerated at first. The balance is higher than normal. Similar interesting data might be obtained by analysis of the weight curve in other conditions.

Spider-Web Clots in Nontuberculous Meningitis.—Post concludes that spider-web clots occur not infrequently with epidemic and sometimes even with a serous meningitis. They form more rapidly (in two hours) and are thicker—because of the adsorption of leukocytes—than in tuberculous meningitis.

Treatment of Jaundice of the New-Born.—Slobozianu gave daily 0.1-0.2 Gm. of cinchophen, in suppositories, in jaundice of the new-born. The duration of the jaundice was shorter than in untreated infants.

Jahrbuch für Kinderheilkunde, Berlin

111: 127-250 (Jan.) 1926

*Goat's Milk Anemia. E. Glanzmann.—p. 127.
*Muscular Exercise and Hardness. H. Opitz and H. Isbert.—p. 165.
*Hardness of Muscles After Recuperation Treatment. H. Opitz and H. Isbert.—p. 177.
*Whooping Cough. F. v. Szontagh.—p. 185.
Intelligence Tests. J. Schlesinger.—p. 195.
*"Jecorized" Milk in Rickets. P. György.—p. 201.
Anaphylactic Skin Phenomena. A. S. Sokolow.—p. 211.
Bismuth and Blood Changes. Andreas Tüdös and P. v. Kiss.—p. 219.
*Chvostek's Phenomenon. J. Stargardter.—p. 225.

Goat's Milk Anemia.—Glanzmann observed goat milk anemia only in neighborhoods where the goats were kept in dark stables and did not get good fresh fodder. The anemia resembled the pernicious type (high color index, low percentage of monocytes, urobilinuria). The milk inducing anemia had usually a strong "buck" odor. He is inclined to incriminate the fats as the cause of the anemia. The vitamin A content of goat's milk was lower than in cow's milk, and the vitamin C content was very low. This accounts for the frequent dystrophy in such infants. It was easier to obtain grave anemia in guinea-pigs by feeding them cow's milk than with goat's milk, but the regenerative changes were strong with the cow's milk, and seemed to be inhibited by the goat's milk.

Muscular Exercise and Hardness.—Opitz and Isbert found in children an increase of about 14 per cent in the hardness of muscles and persisting for ten or fifteen minutes after muscular exercise leading to fatigue. Systematic daily exercise and sanatorium treatment harden the muscles.

Whooping Cough.—Szontagh has never seen a case of infection of other children by a child with whooping cough. He regards it as a symptom of the neuro-arthritic diathesis—especially in the convulsive stage, which, he thinks, is due to the action of some toxin on the cough center. Epidemics of whooping cough alternate with those of measles, and he can find no satisfactory explanation for this. He believes that the activating condition is a contagium volatile.

Irradiated Milk in Rickets.—György treated children with milk and gruels which had been irradiated with artificial sunlight for half an hour to an hour. The milk acquires a taste resembling that of cod liver oil. The symptoms of rickets and tetany disappeared in sixteen of the eighteen children fed with this "jecorized" milk.

Chvostek's Phenomenon.—Stargardter attributes the Chvostek facial phenomenon to spasm of the blood vessels of the nerves. Friction or warming of the cheek arrests the spasm of the vessels as well as the facial phenomenon. The spasm plays also a rôle in tetany—supplementary to the irritability of the nerves due to lowering of the calcium ions of the blood.

Klinische Wochenschrift, Berlin

5: 1-48 (Jan. 1) 1926

The Term "Stimulating Substance" (*Reizstoff*). W. Heubner.—p. 1.
*Field of Vision of Single Eyes. K. Kleist.—p. 3.
*Insulin Fractioning in Children. R. Priesel and R. Wagner.—p. 10.
Phenoltetrachlorphthalein Liver Function Test. U. Franke.—p. 15.
*Roentgen-Ray Treatment of Postoperative Pneumonia. C. Fried.—p. 15.
Sex Character of Hair of Scalp. A. Buschke and M. Gumpert.—p. 18.
Roseola Infantilis. W. Mittelstaedt.—p. 20.
Intrasinal Blood Transfusion. K. Schmitt.—p. 21.
*General Paresis and Mesaortitis. P. Coenen.—p. 22.
"Simplified Respiration Apparatus." A. Hellwig.—p. 23.
Reply. H. Schadow.—p. 24.
"Action of Local Circulatory Disturbances." G. Ricker.—p. 24.
Phenomenon in Precipitation Tests. Friedberger and Ikeda.—p. 24.
Electric Phenomena in Acetyl-Choline Contracture. H. Schäffer and H. Licht.—p. 25.
Idem in Heidenhain's Tongue Phenomenon. Idem.—p. 25.
Serology of Syphilitic Twins. F. von Gutfeld.—p. 26.
Diagnosis of Incipient Tuberculosis. W. Neumann.—p. 27.
*Suicides After War. K. Freudenberg.—p. 29.
Strophanthus Tincture in Chronic Cardiac Insufficiency. D. Pletnew.—p. 46.
Protein Content of Puncture Fluids. J. Kleeberg.—p. 47.

Field of Vision of Single Eye.—Kleist has collected evidence indicating that the differentiation of a layer of the cortical center of vision into two depends on the development of a field of vision common to both eyes.

Insulin Fractioning in Children.—Priesel and Wagner recommend in diabetic children daily two doses of insulin, twelve hours apart. The first is given at the latest at 7 or 8 a. m., and should be larger than the second. The same amount of carbohydrates given in the morning causes a higher glycemia than at noon.

Roentgen-Ray Treatment of Postoperative Pneumonia.—Fried irradiated forty patients with postoperative pneumonia. Only one of them died. He also had fair results in nine cases of pneumonia of other origin.

General Paresis and Mesaortitis.—Coenen found syphilitic mesaortitis in 22 per cent of the 191 general paresis necropsies made in 1908-1914. Among 147 cases from 1915-1925, mesaortitis was present in 42.9 per cent. He discusses the relation to treatment, but admits that his material is insufficient to decide the question.

Suicides After War.—Freudenberg publishes statistics on suicides in Germany between 1911 and 1923. The frequency of suicides in men declined about one third during the war. The figures for women show a slow and steady increase. Age and occupation give other interesting indications on the causes of suicides.

5: 49-88 (Jan. 8) 1926

Basal Metabolism Determination. P. Liebesny.—p. 49.
The Splanchnic-Peripheral Balance and the Permeability of the Vessels. E. F. Müller and W. F. Petersen.—p. 53.
Insulin Treatment of Underweight Children. Priesel and Wagner.—p. 57.
*Scurvy and Chronic Tuberculosis. B. Heymann.—p. 59.
Action of Germanium Dioxide. W. Keil.—p. 62.
*Iodine Reaction of Blood Platelets. Z. v. Rokay.—p. 63.
Histologic Demonstration of Lime. E. Freudenberg.—p. 64.
Visualization of Gallbladder. E. Rachwalsky.—p. 66.
*Bacteriology of Material Contaminated by Proteus. A. Schuback.—p. 67.
*Wassermann Reaction Induced by Injection of Lipoids and Serum. R. Brandt et al.—p. 68.
Tuberculin by the Mouth. A. Rebay.—p. 69.
"Calcium Versus Strontium." Salzmann and Haffner. Reply. Hirsch and Oppenheimer.—p. 69.
Metabolism in Pylorospasm. H. Vollmer and J. Serebrijski.—p. 70.
Glucose as Antidote in Guanidine Poisoning. J. Bakucz.—p. 70.
*Prevention of Congenital Syphilis. H. Boas.—p. 71.
*Mineral and Especially Iron Metabolism. E. Oppenheimer.—p. 76.
Capillary Tonometer. E. Rajka.—p. 87.

Scurvy and Chronic Tuberculosis.—Heymann found no influence of avitaminosis on the course of tuberculosis in guinea-pigs, but the scurvy was accelerated by the tuberculosis. One of the sources of experimental errors, he found, is the fact that some guinea-pigs do not learn to drink water, and die on the dry diet.

Iodine Reaction of Blood Platelets.—Rokay does not consider Stahl's observations on iodophilic clumps in the platelets and megakaryocytes suitable for deciding on the origin of the blood platelets.

Bacteriology of Material Contaminated by Proteus.—Schuback prepares an agglutinating serum with various

strains of proteus bacilli and adds 0.2-0.3 cc. of it to 10 cc. of agar. The serum inhibits the spreading of the proteus all over the plate.

Wassermann Reaction Induced by Injection of Lipoids and Serum.—Brandt, Guth and Müller injected animals with hog serum alone or mixed with lipoids. The serum from these animals reacted only weakly with those antigens which proved best in the Wassermann reaction. The reaction was never stronger than with simple lipoid antigens.

Prevention of Congenital Syphilis.—Boas reviews all the means for prevention of congenital syphilis. Besides other measures, arsphenamine treatment of the mother before and during the pregnancy gave the best results (six healthy children out of seven). Mercury administered during the pregnancy is much less efficient: Of the children from twenty-six mothers who had received arsphenamine before and mercury during the pregnancy, seven of the twenty-six were syphilitic. Only one healthy child was found among 158 born from untreated mothers.

Mineral and Especially Iron Metabolism.—Oppenheimer emphasizes the importance of Baudisch and Web's experiments on the "X factor" of fresh mineral waters responsible for their catalytic and oxidizing action. Very labile compounds of iron—investigated among other methods with roentgen rays—were discovered. They may represent the original form which developed into blood.

Monatsschrift für Geb. und Gynäkologie, Berlin

72: 1-128 (Jan.) 1926

*Secretion and Resorption of Amniotic Fluid. H. R. Schmidt.—p. 1.
Epinephrine Test and Pregnancy Vagotonia. H. Eufinger and L. Heimannsberg.—p. 9.
Pregnancy Ileus. J. Malfatti.—p. 24.
Decidua in Pregnant Tube. R. Zimmermann.—p. 30.
Mechanics of Cell Development. L. Weill.—p. 40.
Injuries of Lower Segments of Sex Organs in Spontaneous Delivery. H. Hinselmann.—p. 43.
Mercury Poisoning by the Vagina. B. Liegner.—p. 47.
Against Sterilizing of Younger Women. K. Neuwirth.—p. 53.
Maternity Welfare Work. A. Martin.—p. 66.
Roentgen Treatment in Gynecologic Inflammations. L. Theodor.—p. 69.
Survey on Roentgen Treatment in Gynecology. Engelbrecht.—p. 81.

Secretion and Resorption of Amniotic Fluid.—Schmidt confirms the theory of secretion of amniotic fluid by the placentar amnion. He also agrees with Cramer's opinion that one type of hydramnion may be due to absence of resorption of the fluid owing to some obstruction in the upper part of the digestive tract of the fetus.

Wiener Archiv für innere Medizin, Vienna

12: 1-168 (Jan. 5) 1926

*Cardiac Asthma. S. Wassermann.—p. 1.

New Clinical Points of View on Cardiac Asthma.—Wassermann devotes 168 pages to discussion of the pathogenesis and clinical aspects of cardiac asthma. The typical attacks occur with insufficiency of the left ventricle, and have primarily nothing to do with a retrograde stasis: The attack is a reaction of the central nervous system (especially the medulla) to anoxemia. Insufficiency of the aortic valves and infarctions in the left ventricle are the main causes. Morphine, oxygen and nitrites are indicated. The second type of cardiac asthma—due to stasis in the lungs—is characterized by cyanosis, and does not cause an acute increase in blood pressure. Mitral disease is the usual cause. Venesection, digitalis, caffeine, oxygen and, sometimes, small doses of morphine are indicated, although of little help.

Zeitschrift für Tuberkulose, Leipzig

44: 177-272 (Jan.) 1926

Bilateral Pneumothorax. J. W. Samson.—p. 177.
Tuberculosis Infection and Disease in Children. F. Kreuser.—p. 184.
Social Factors in Tuberculosis Mortality. W. v. Friedrich.—p. 193.
*Tuberculosis of the Heart. W. Stefko.—p. 199.
Air Content of the Apices. E. Ladeck.—p. 205.
Antepleural Manometer Oscillations. D. Meerson.—p. 206.
*Temperature and Allergy in Menstruation. G. Gáli.—p. 212.
Meinicke's Test in Sanatoriums. O. Eicke.—p. 218.

Tuberculosis of the Heart.—Stefko found tuberculosis in the heart in 80 per cent of his necropsies of the persons who had died from tuberculosis. He attributes this to the change of the condition of the heart due to the Russian famine. The reaction consists of an epitheloid infiltration, originating in the endothelium of the capillaries, and a subsequent phagocytic action of the newly formed cells, which, however, only removes the waste products. The cellular infiltration in tuberculosis of the heart in cattle is of the fibroblastic type.

Temperature and Allergy in Menstruation.—Gáli finds that menstruation does not influence the temperature, nor the allergic manifestations of tuberculous women.

Zentralblatt für Gynäkologie, Leipzig

50: 193-256 (Jan. 23) 1926

Social Indication in Gynecology. W. Benthin.—p. 194.
*Cancer Statistics and War. F. Kauffmann.—p. 198.
Age and Maturity of Uterine Cancer. L. Ballin.—p. 214.
Extra-Uterine Pregnancy with Cancer of Cervix. J. Batisweiler.—p. 217.
Sterilization by Crushing the Tubes. M. Madlener.—p. 219.
*Errors and Dangers in Pubiotomy. Niedermeyer.—p. 221.
Results of Vesicovaginal Interposition of Uterus. Pollack.—p. 226.
Palpation of Fetal Heart Beat in Hydramnios. B. P. Fomenko.—p. 231.
Ileo-Inguinal Neuralgia After Alexander-Adams. H. Küster.—p. 232.
Vesicovaginal Interposition of the Uterus. A. Paunz.—p. 233.

Cancer Statistics and War.—Kauffmann's material consists of about 2,000 cancer cases at Bumm's gynecologic clinic between 1912 and 1923. The maximum incidence of cancer shifted after the war toward the younger women. This indicates, he says, that external conditions have a pathogenetic significance for cancer.

Errors and Dangers in Pubiotomy.—Niedermeyer has changed his previous opinion favoring pubiotomy, and now prefers to widen the indications for cesarean section.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

1: 229-320 (Jan. 16) 1926

*Calcium Treatment in Tuberculosis. J. Pinkhof.—p. 230.
Ethyl Chloride Anesthesia. W. C. Meiss.—p. 235.
*Acute Salpingitis or Appendicitis? B. S. ten Berge.—p. 243.
*Jaundice in the New-Born. P. H. Kramer.—p. 249.

Calcium in Treatment of Pulmonary Tuberculosis.—Pinkhof has been favorably impressed with the effects of intravenous injection of 5 cc. of a 10 per cent solution of calcium chloride in treatment of febrile cases of pulmonary tuberculosis rebellious to other measures, but with the organism still capable of responding to stimuli. The injections were made three times a week, in three series of twenty injections, and he never witnessed any untoward by-effects in the 100 sanatorium cases (three years; 3,000 injections). In forty cases they were given merely for the subjective influence, as the condition was hopeless, but he was surprised at the unmistakable benefit observed in a few in this group. In forty of the sixty others the improvement was pronounced. The calcium seems to reenforce the general resisting powers, accomplishing a general improvement and thus indirectly influencing the fever. The temperature returned to normal in the first series in twelve patients; the sputum rapidly became more fluid and less in amount, and the physical findings soon changed for the better. No effect from the calcium treatment was apparent in ten cases and ten others failed to complete the course.

Acute Salpingitis Versus Appendicitis.—Ten Berge analyzes twenty-four cases in which the diagnosis wavered between appendicitis and acute salpingitis. His experience shows the necessity for treatment as if for appendicitis in case of doubt; only three in the group proved to have salpingitis instead, and in all these the appendix was more or less involved. In the twenty-one pure appendicitis cases, leukorrhea was common and there was urethritis in three and menorrhagia in eight, and in seven there was pain on pressure to the left, above the symphysis. Three complained of intense pain during vaginal examination. Examination through the vagina and rectum is most instructive in exacerbations of an old process; in a recent infectious process, the adnexa are not much enlarged.

Jaundice in the New-Born.—Kramer found bilirubin in the blood of the umbilical cord in amounts ranging from 1:28,000 to 1:140,000; the average 1:46,000. The van den Bergh indirect reaction was pronounced, but the direct reaction was never observed in the 100 new-born tested nor in a number

of other infants a few days old. All with more than 1:36,000 bilirubin presented jaundice, and none of those with 1:70,000 or below. His findings confirm that mechanical jaundice does not occur in icterus neonatorum. There seems to be a progressively increasing bilirubinemia in all mammals for a few days after birth. Destruction of surplus erythrocytes (fetal and maternal) might account for this. He thinks that it represents a reserve supply, like the large iron reserve with which the child is born.

1: 413-508 (Jan. 30) 1926
*Pathologic Glia and the Cell. S. T. Bok.—p. 414.
The Malaria Commission of the League of Nations in Spain. N. H. Swellengrebel.—p. 424.
*Caution in Prescribing Mercurial Ointment. E. J. Hamburger.—p. 432.
*Diathermy in Treatment of Gonorrhea in Women. P. J. van Putte.—p. 437.
*Correction of Hemorrhagic Tendency by Splenectomy. W. Reilingh.—p. 441.
Delivery of Child with Hydrocephalus in Breech Presentation. Van den Berg.—p. 446.
The Conference of the International Public Health Bureau at Paris, Oct. 21, 1926. N. M. J. Jitta.—p. 466.

Pathologic Glia and the Conception of the Cell.—Bok insists that the becoming visible of the glia protoplasm in the Nissl preparation is due to a chemical change in the protoplasm and a slight swelling, a physical change, both of which begin at the nucleus and spread thence, growing progressively fainter. The cells cannot be regarded as individual building stones. The alleged cell is merely the sphere of influence of a nucleus lying in a field of protoplasm, which connects uninterruptedly with the protoplasm of the adjacent so-called cells. The article is illustrated; it issues from the university laboratory at Amsterdam in charge of Bouman. His arguments sustain the syncytium theory of the cells.

General Intoxication from Mercurial Ointment.—Hamburger had ordered gray ointment to destroy crab lice in the pubic hair, but the man applied it as a regular vigorous inunction five times within sixty hours. He then developed symptoms suggesting intestinal invagination or dysentery until the mercurial poisoning was recognized.

Diathermy in Treatment of Gonorrhea.—Van Putte relates that he cured both clinically and bacteriologically ten women with old and rebellious gonorrhea by means of five hours of diathermy in a single day.

Cure of Purpura by Splenectomy.—The special form of grave purpura due to essential thrombopenia was cured at once by the splenectomy in the case described. The bleeding time was forty minutes and there were scarcely any thrombocytes to be discovered before the splenectomy. It was followed by a drop to fourteen minutes at once while the monocytes ran up from zero to a million in about two weeks. The discovery of the thrombopenia in the blood gave the clue for successful operative treatment. The hemoglobin percentage dropped to 50 but gradually rose to 80 in three months.

Hospitalstidende, Copenhagen

69: 29-48 (Jan. 14) 1926
*The Thalamus Syndromes. G. Roussy.—p. 29.

Function of the Thalamus Opticus and the Thalamic Syndromes.—The clinical picture described by Dejerine and Roussy in 1906 as the thalamus syndrome is characterized by the dissociation of the motor and the sensory phenomena; the motor symptoms may subside but the sensory are permanent. Roussy here reviews the other syndromes which may be induced by lesions in or in the vicinity of the thalamus. He has encountered cases confirmed by necropsy in which there was no spontaneous pain, while in other cases emotions, even music, induced pain in the tributary region. He accepts Lhermitte's recent hypothesis that the thalamus is an analyzing organ, a selecting filter for the sensory streams, all of which pass through it. When any essential portion of this analyzing organ is destroyed, the sensory impulses pass onward to the cortex instead of being selectively arrested by the thalamus, as in normal conditions. The hypothalamus syndrome is distinguished by the lack of pains and the presence of cerebellar disturbances. A circumscribed lesion in the corpus striatum causes hypertonia or hypotonia, muscular rigidity or muscular jerking, according to the portion involved. The physiology and pathology of the thalamostriatal centers are proving so important in respect to sensory impulses of all kinds and control of the grouping and combinations of involuntary movements, that we must regard the central ganglion system, he says, as something more than a mere humble servant of the thinking apparatus. This article formed the Rask-Orsted fund lecture delivered by Roussy at Copenhagen recently.

Ugeskrift for Læger, Copenhagen

87: 1193-1202 (Dec. 31) 1925
*Brain Tumor. H. Jessen.—p. 1193.
*Vaccine Therapy for Bronchitis with Asthma. G. Hagens.—p. 1195.
Separate Ampules for the Solution of Procaine and of Epinephrine and Mixture in the Syringe for Local Anesthesia. Sennels.—p. 1196.
Expenditures of Six Physicians' Families in 1922. P. Heiberg.—p. 1197.

Successful Operation for Brain Tumor.—Jessen's patient was a woman, aged 50, who four years before had noticed that she could not use her left leg in bicycling. Other symptoms gradually developed, suggesting a tumor in the motor region, left cerebral hemiplegia, complete for the leg, partial for the arm, bilateral choked disk and impairment of vision, but no jacksonian symptoms. The tumor was found in the right fissure of Rolando, adherent to the dura, but it was easily shelled out from the brain tissue with the finger. It was the size of a mandarin orange and soft, of the endothelioma or meningeoma type. The dura and the skin were sutured, leaving only a small cigaret drain, and no attempt at radiotherapy was made. The outcome surpassed all expectations. Vision is now practically normal in one eye and fairly good in the other, and the hemiplegia has entirely subsided, leaving only a little weakness and persisting impairment of the sense of position in the foot.

Chronic Bronchitis with Asthmatic Attacks.—The middle aged woman had been having chronic bronchitis for nearly five years, with attacks of asthma, the whole so severe that she was confined to bed most of the time. Two intercurrent attacks of influenza had been followed by such marked improvement for a time that Hagens tried autogenous mixed vaccines, aiming to induce fever with them. Benefit promptly followed, the same as after the febrile influenza, and has persisted for three months to date.

88: 79-102 (Jan. 28) 1926
*Pernicious Anemia. H. C. Gram.—p. 79.
*Protein Therapy for Erysipelas. A. Jensen.—p. 87.

Etiology and Pathogenesis of Pernicious Anemia.—Gram presents an array of testimony to sustain his assumption that pernicious anemia is a chronically intermittent intoxication with toxic substances which act on the blood cells in the circulation and in the bone marrow, thus inducing hemolysis and a pathologic regeneration, with lack of myelogenous leukocytes and blood platelets. The toxic substance acts also on the stomach and on the buccal mucosa, inducing glossitis with irritation of the tip of the tongue and atrophy of the papillae, and gastritis with achylia. These changes may occur long before the pernicious anemia becomes manifest. The toxic substance sometimes induces a disseminated myelitis with symptoms in the form of paresthesias and anesthesia. The source of the toxic substance seems to be in the small intestine, and to proceed from the bacteria or from the bothriocephalus therein contained. The abnormal or excessive flora in the small intestine and an increased permeability for the toxin formed or the failure of the toxin-resisting mechanism are essential factors, and these may have a familial or hereditary character. Naturally, any stricture or other lesion impeding bowel function will tend to render the bacterial flora more abnormal and thus start a vicious circle. Any fluctuation in any of the factors may entail a remission.

Protein Therapy of Erysipelas.—In the four cases of erysipelas of the face described, intramuscular injection of 5-10 cc. of cow's milk the second, third or fourth day seemed to arrest the process at once, and a second injection completed the cure. The skin was natural again in six days in one case and had scabbed over in four days in another case.

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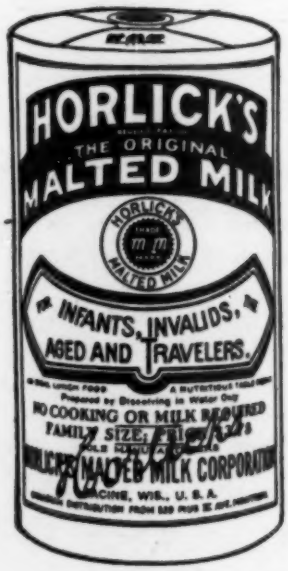

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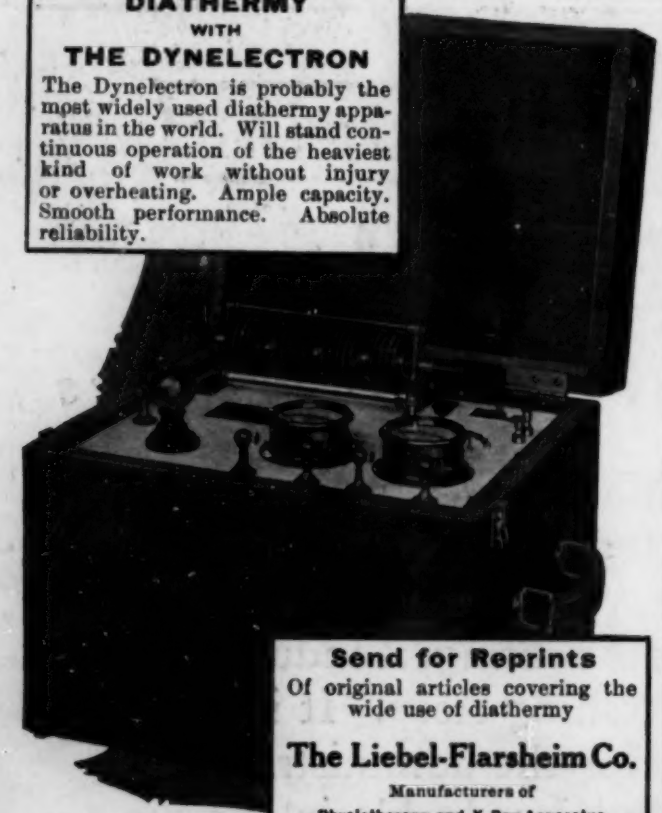

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